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R.M.KELLOGG'S

Great Crops of Small Fruits

How to grow them



A TEXT BOOK FOR PROGRESSIVE FRUIT GROWERS

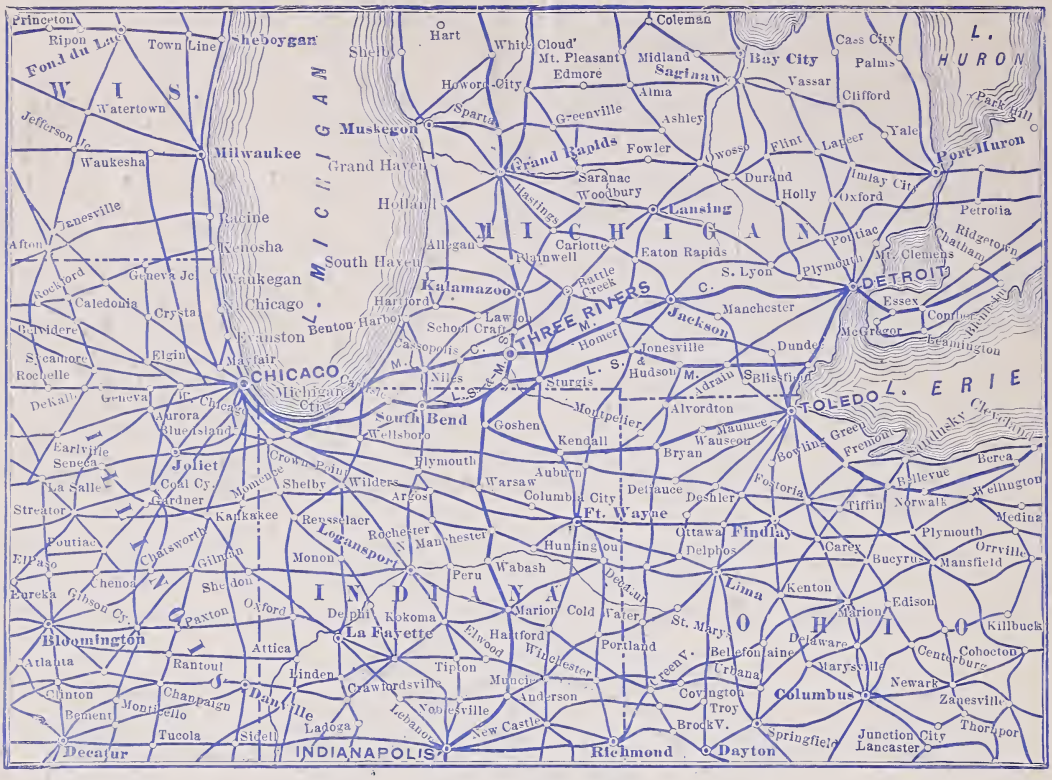
THE LARGEST CROPS FINEST FRUIT LEAST LABOR

1900 1900

A treatise on plant life, and the laws which govern the development of Fruit.

THREE RIVERS, MICH.

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Ripon
Fond du Lac
Town Line
Sheboygan
W I S.
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Jefferson
Waukesha
Milwaukee
Janesville
Racine
Kenosha
Waukegan
Chicago
Geneva Jc
Caledonia
Crysta
Belvidere
Evanston
Sycamore
Elgin
Rochelle
Mayfair
CHICAGO
Dekalb
Geneva
Aurora
Bluelsland
Earlville
Seneca
Joliet
La Salle
Coal Cy.
Gardner
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Napoleon
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Sandusky
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TOLEDO
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Alvordton
Montpelier
Sturgis
Hudson
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Lake St. Clair
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Port Huron
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Lapeer
Flint
Durand
Holly
Oxford
Pontiac
Mt. Clemens
Chatham
Ridgetown
Petrolia
Oil Springs
Wallaceburg
Chatham
Blenheim
Tilbury
Essex
Harrow
Amherstburg
Grosse Isle
Trenton
Monroe
Toledo
Fremont
Sandusky
Cleveland
Akron
Canton
Massillon
Orrville
Wooster
Mansfield
Galion
Bucyrus
Marion
Delaware
Columbus
Springfield
Dayton
Xenia
Zanesville
Cambridge
Cadiz
Steubenville
Wheeling
Bellaire
Martins Ferry
Barnesville
Cambridge
Coshocton
Millersburg
Wooster
Orrville
Akron
Cleveland
Ashtabula
Conneaut
Erie
Meadville
Titusville
Oil City
Franklin
Warren
Corry
Union City
Girard
Waterford
Edinboro
Cambridge Springs
Meadville
Conneaut
Ashtabula
Geneva
Painesville
Mentor
Willoughby
Euclid
Cleveland
Akron
Ravenna
Kent
Warren
Youngstown
Niles
Sharon
New Castle
Beaver Falls
Rochester
Beaver
Pittsburg
Allegheny
McKeesport
Monongahela
Washington
Wheeling
Steubenville
Weirton
Follansbee
Wellsburg
Bethany
Washington
Canonsburg
Carnegie
Pittsburg
Allegheny
Sewickley
Ambridge
Aliquippa
Beaver
Rochester
New Brighton
Beaver Falls
Ellwood City
Grove City
Mercer
Sharpsville
Sharon
Hubbard
Youngstown
Warren
Ravenna



R. M. Kellogg searching for the ideal plant and bud variations with a view of improving the variety.



The Professor at the Agricultural College teaching a class how to select animals to improve the breed

Like begets like whether in breeding plants or animals.

A scrub never begat a thoroughbred plant or animal.

Selection and restriction is the basis of all improvement.

The pedigree of a plant is the history of its breeding and determines its value for bearing fruit.

FRUITING PLANTS.

In the following pages I have given the methods which have enabled me to produce the largest crops of fine fruit yet reported to have been grown.

That the measures taken to produce these results may be better understood by the reader, I have endeavored to bring out the salient features by a series of direct questions and answers:

What is a Pedigree Plant? — The word "pedigree" means a detailed description of individual ancestry in a lineal ascent. It is used in a technical sense, signifying skilful breeding or in other words that the plant has been propagated through a series of years from the most perfect plant of that variety which could be found and that it has been kept under restriction so that its physical condition is such that it will devote its energies to the production of fruit instead of wood buds. It is a mistake to say that because a plant is propagated from a bud and has but one parent it is not a distinct individual as much as one produced sexually or through the seeds. While it is true that it partakes more largely of the mother nature and with less variation than through seeds yet changes are constantly going on as you can readily see in any berry field. A careful study of the physical condition of plants will readily show wide differences and these differences are surely transmitted through their runners. The following propositions are submitted in evidence of these facts.

What is Fruit?—It is a substance which grows on certain plants and trees in which seeds form and the development of fruit flesh depends on the seed bearing habit and constitutional or seminal vigor of the plant. If the plant through neglect or bad propagation has lost the habit or ability to produce seeds little fruit can be secured.

What are Seeds?—They are the eggs of the plant. We put hens eggs under the hen and in 21 days out pop the chickens; we call this hatching. We put the seeds of the strawberry in moist warm ground and in a few days up spring new plants. We call this seed germination but we might call it hatching the seeds.



Egg of an Oak Tree.

Are there not Plants which produce Fruit without Seeds?—Yes, the banana, navel orange, pine apple, etc. It is well known that these fruits once produced seeds but the habit has been lost. They are regarded as freaks and are the exception among fruits. The strawberry, apple, peach, or any of the fruits grown in this latitude, produce seeds. If there are no seeds there will be no fruit. A knotty or deformed berry or apple is caused by the lack of vitality of the seeds in the defective part.

On what does the production of large crops of Fruit depend?—On the physical condition of the plants and their natural habit of breeding through fruit buds instead of wood buds or runners, and then assisting the plant to do its work by supplying proper food and thorough tillage.

Are plants Male and Female?—Yes, the sexual organs found in their blossoms are identical with all the parts named in an animal and fecundation takes place between them in a similar way.

Do plants have the breeding passions possessed by animals?—Yes. It is even more intense



Lack of Pollen.

than with animals. If plants are not pruned thus relieving them of a part of their fruit buds they will fruit themselves into impotency or what in an animal would be called seminal exhaustion.

How is this condition manifested?—You often see a field of strawberries or bush fruits on good rich land with plants or bushes in a vigorous condition but they produce very little fruit. While it is true that soil conditions and food supplies are factors of great importance, yet the chief cause of their unfruitfulness is the lack of potency in pollen and weakness of pistils.

Will you give some illustrations of this?—Notice that when apple trees bloom very full—white as snow—when every twig is loaded with blossoms very little fruit sets and what does grow is small and inferior in quality. This is because the tree does not have the ability to impart potency or life to so much pollen Our largest crops of fine fruit are grown when we have moderate bloom or the trees have been restricted by close pruning before blossoms open in the spring. They can then concentrate their powers on fewer blossoms, the potency of pollen is strong and the seeds are vigorous, with consequent full development of fruit flesh. This is why the successful orchardist prunes his trees and vines every year, cutting off a large part of the buds. Everybody knows that unpruned orchards, vineyards or fruit bushes quickly become unfruitful.

How do you prune Strawberries to prevent exhaustion?—Having set the plants in the spring we cut the blossom buds off as soon as they appear, to prevent the plants from undergoing the exhaustive process of pollen secretion at this time when they have no roots to sustain them as this greatly impairs their vitality.

Do you cut off any blossoms after the first year?—No, having bred the plants up to great vigor by selection and restriction and given them the first year to grow and develop their fruit buds, we now let them throw all their energies to the production of fruit for two or three years when their vitality is destroyed and we then plow them under and take new vigorous plants from the propagating bed for the new setting.

What objection have you to the custom of taking plants from those set to fruit the previous spring from which the blossoms were removed and doing this year after year?—It is a law of nature that any faculty never exercised ceases to exist. If you pick blossoms off year after year the plants will lose the habit of fruit production and then multiply themselves by making great numbers of runners or large bushes. You can only train them to fruit by allowing them to do so, but they must not be permitted to overbear and exhaust themselves, hence the necessity of restricting the mother plant as explained in the chapter on the propagating bed.

Why can you not take plants from alongside the matted row of beds set the previous year for the fruiting field?—These are the weakest plants as they are the last to form in the fall, and generally have imperfect buds which fail to develop in the spring, causing them to lose the habit of forming fruit buds Their roots are generally immature and being on the outer edges of the row are nearly always so weakened by freezing and thawing that it is difficult to make them grow which explains the long vacant places in the field. *The good and bad plants* cannot be separated, some being fruitful and some unfruitful greatly reduces the crop both in quality and quantity.

How shall we make a practical test of this?—In your vineyard, blackberry, raspberry and strawberry field, select one row each and give them the same cultivation as the others but do not prune the



A glass of berries photographed, exact size. All the illustrations are photo-engraved from the original berries, expressly for this work.

The Marshall
The Bismark

bushes or cut off any blossoms. Let them bear all they will each year. Notice that after one very large crop they bear smaller berries and fewer in number, but the bushes continue to grow vigorously and the strawberries throw out a great number of runners but set little fruit. Now take cuttings and strawberry runners from these plants and cultivate carefully and you will get a host of bushes and strawberry plants with very little fruit and that inferior in quality.

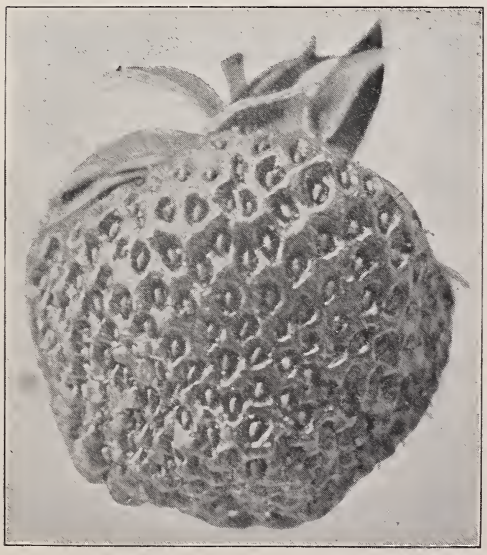
Why is this?—Because through the excessive seminal effort of pollen secretion they become impotent or in other words their breeding powers being overtaxed are destroyed and then they throw their energies to the growth of wood and runners. *Let me repeat.* Fruit production is a *sexual act.* Fruit forms as a substance for the seeds to grow in and the development of fruit depends entirely on the seminal vigor of the plant and large crops of fine fruit cannot be grown on trees, bushes or plants which are weakened in fruit production.

Is not rich soil and extra good tillage the true basis of large crops of fine fruit?—These are absolutely necessary. No one can expect plants to respond in fine fruit when they are overrun with weeds and have little plant food in the soil, but note carefully the fact that exhausted plants cannot be forced into large fruitage in this way.

How are "cheap" plants grown?—These exhausted plants throw all their energies to making runners. They will produce several times as many plants as those trained to produce fruit and hence growers are able to offer them for little more than the cost of digging and packing.

Will not exhausted plants make large roots and leaves?—Certainly they will. The trouble is, being exhausted in seed bearing they will not form fruit buds and the more you manure and cultivate, the larger your plants will grow but they will make runners instead of bearing fruit.

Do the same laws of nature hold good in breeding plants which obtain in breeding animals?—When breeding sexually they do in all particulars. All plants propagated by seeds have a father and mother just the same as an animal, but plants may be propagated without the aid of sexes by dividing the protoplasm in the nodes and internodes of the wood in which variations are less.



The Sample.

SEEDLINGS.

Why is it our new varieties are so largely seedlings?—We do not know that many of our best varieties are not bud sports or variations. Nearly all are found by accident here and there. Often a single plant in an old bed attracts attention or in some fence corner or out of the way place. Seedlings vary much more because they have a father and mother and get two parental impressions and may take a greater impress from the one than the other, thus in some families of children they all resemble the father, in others they look more like the mother and sometimes like the grandparents and in some instances have no family resemblance.



The Wm. Belt.

Is it difficult to get valuable varieties through seedlings?—Yes, it is very difficult; the variations are so great that out of twenty thousand seedlings you might not get one worthy of introduction for general cultivation. We never get two seedlings exactly alike. While we can get new varieties quicker in that way, yet they are not reliable because they vary so greatly from the desired type. When we find a valuable seedling, on account of these great variations we multiply it by its runners or buds as in layering, grafting, etc., until their characteristics are fixed by continuously selecting the best, throwing out the weak ones and encouraging the development of good qualities by high tillage and restriction.

Why is it you can multiply a plant by cutting it in pieces as scions, runners, etc.?—Because the protoplasm or life principle is in all the nodes and internodes throughout the branches where it remains dormant until excited into active life by cutting them apart and giving them nourishment as by making cuttings, budding, grafting, etc.

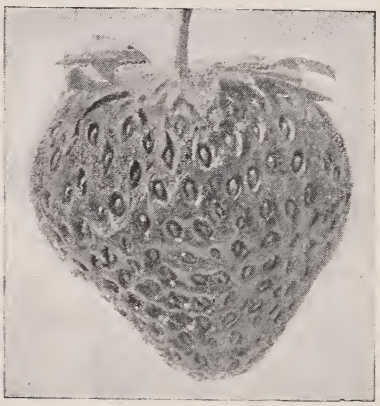
What is protoplasm?--It is a jelly like substance in which the principle of life resides. Scientists have proven that the protoplasm of plants is exactly the same as that of animals. The strawberry plant multiplies itself by this protoplasm being located in the nodes of the runners which is the same as the nodes in the tree or bush. It is the same potential life germ found in the seeds. The blackberry and red raspberry form these nodes in the roots so that we can cut the roots up and get a plant from

each piece. The black raspberry and dewberry form them in the tips of the canes which we bury in the ground and the germ develops into a plant the same as if it were a seed.

Why is it that plants propagated by buds do not vary so much as those grown from seeds?—Because, figuratively speaking they have a mother but no father. They receive only the impression of the "mother" plant and therefore their fruit more closely resembles it; in other words, each runner or cutting is the divided protoplasm of the mother plant and therefore possesses all the weakness or good qualities of the parent plant. If the parent plant is weak the runner will be weak. If strong and vigorous that quality goes with the bud.

Do these asexual plants or buds and runners never vary?—Yes. Under changed conditions and when stimulated by high tillage they make very marked variations. Sometimes so much as to be regarded as entirely new and distinct varieties.

Florists who propagate largely through cuttings pay the greatest attention to bud variations by selecting those which make desirable changes to propagate from and in this way have produced magnificent specimens of double flowers and have greatly increased the blooming habit of plants and thus originated a large number of new varieties. The magnificent double roses and variegated foliage plants are produced by this method. There is a long list of bud varieties in fruit produced in this way which are called sports.

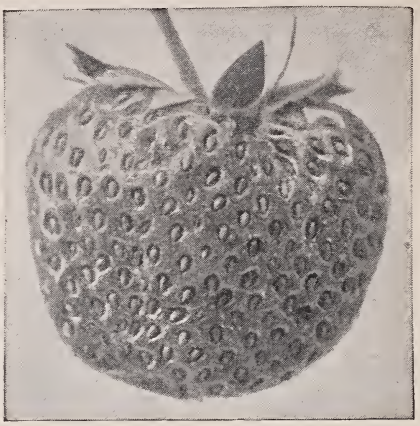


Gandy.

Will these bud sports transmit their peculiarities to new plants grown from them?—Yes. There is no doubt about this. When you find a good variation even a single limb on a tree or strawberry runner you can retain it by propagating from it and if you find a still better variation in these new plants you can further improve the variety by propagating from them.

Is this the way you breed up your plants?—Yes. While the varieties retain their old names they are practically new sorts because they are so greatly improved in general fruiting vigor.

Why is it that in a bed of common plants we occasionally see one growing extra fine berries while a great majority of plants produce only a few small berries?—Because the plants not being selected each year soon differ greatly in vital or seminal vigor. Some are more exhausted or devitalized than others. Occasionally a plant has partially recovered and bears a few large berries, but as a rule fruit growers and nurserymen pay no attention to the condition of their plants in regard to fruiting vigor,



Aroma.

but propagate from anything and everything and so under high tillage one plant makes runners and another fruit so that the yield on the average is only 75 to 100 bushels of inferior fruit to the acre while if each plant were fruiting to its full capacity there would be several times as many quarts of a very much higher quality of fruit which would command the highest price and always have a ready sale, and this difference represents the real value of thoroughbred plants as compared with common plants.

Why is it that fruit growers in general have not improved their plants in this way?—Because they did not understand that plants could be improved. It was a mystery to them why their plants when well cultivated and manured made so many runners but produced so little fruit. We might as well ask why the telephone was not in general use thirty years ago. The principle of transmitting sound by electricity had not then been discovered.

What would be the effect of continuously selecting through a series of years the poorest plants you could find for propagation?—The varieties would all run out and that is what a great majority of fruit growers are doing as already stated. They take the tip plants by the side of the matted row which are the last to form in the fall and have immature fruit buds and green succulent roots which causes them to lose their ability to form fruit.

What was the origin of your work in breeding plants in this way?—My experience in this line dates back sixteen years when I commenced growing berries for market. I was greatly impressed with the wide difference in the fruitage of my plants. Some producing many fine berries while others by their side grew berries of an inferior quality. Careful examination convinced me that the secret lay in the physical condition of the plants. They had been taken from the edges of matted rows as was then the general custom. The theory being that a plant taken from a poor plant is just as good as one from an extra good plant if well manured and cultivated which we now know is not true.

How did you make the beginning?—The first thing to do was to fix in the mind the ideal type of berry I wanted to produce and then go into the fruiting field to search for the plant that approached the nearest to it. In the spring when first set the search began. If the plant had an especial fine stocky foliage it was located by a stake and numbered and every essential feature noted on a scale of one to ten The next spring half the blossom buds were removed from each stem before they opened to prevent pollen exhaustion. When the fruit had set only one or two



Sunnyside.

berries on each stem were allowed to mature to determine size, color, texture and flavor, and to encourage the habit of fruit formation by exercise in that direction. When all the berries were ripe and the scale of each number footed up we were able to determine definitely which plant possessed the greatest number of points of excellence and this was then selected to become the *mother plant* of all that variety on the farm.

Its runners were carefully potted and transferred to a special propagating bed and given extra good culture to stimulate further good qualities in the runners which were allowed to form for our next year's planting.

From these, selections were made the next year for the ideal "mother plant" and thus through all these years the Pedigree shows parentage of the best individual plant on the farm of that year kept in full fruiting vigor by restriction.

By this method every plant which declined in fruiting vigor or from any other cause was at once discarded.

The result of this practice under my system of the most thorough tillage was that the fruit on each plant rapidly improved in quality and quantity. At the beginning my crops averaged 75 to 100 bushels to the acre of commonly good fruit but under this method the yield rapidly increased until it reached from three to five hundred bushels of very superior berries.

The fame of my fruit spread far and wide and secured for me special customers who engaged everything in advance at fancy prices.

The call for these plants became so great that I could not supply it with facilities I then had and I determined to provide myself with the most perfect conditions possible for improving and breeding them. The present grounds were selected after a search of many weeks throughout the great fruit belt of Western Michigan. The soil and location are ideal for the purpose being located on an elevated plain partly within the limits of the beautiful manufacturing city of Three Rivers.

It has been made practically virgin soil by heavy applications of stock yard manure and then plowing under leguminous plants to which were added liberal applications of bone phosphate so that the development of good qualities in the plants should be encouraged in all possible ways. It is not difficult to maintain quality after you get it built up to the proper standard.

On the testing grounds will be found all the most valuable new varieties of small fruits grown in this latitude growing under conditions to bring out their true value and best variations from which to secure the ideal mother plant for renewing each variety in my propagating beds.

This gives you the Pedigree of the plants we grow and send out to our customers, and a cordial invitation is extended to every one interested in fruit growing to visit our grounds whenever convenient to do so. The hacks which are always at the depot carry visitors to the farm at my expense and entertainment is free while you stay.

THE AGRICULTURAL DEPARTMENT

at Washington has been making experiments along this line and reported them in the year book for 1898, under the head of "Improvements of Plants by Selection" which fully confirms all the claim we have ever made. A special reprint has been issued for general distribution. Every fruit grower can get it free. Write to the Secretary of Agriculture, Washington, D. C., or to the Congressman from your district and ask him to procure it for you.

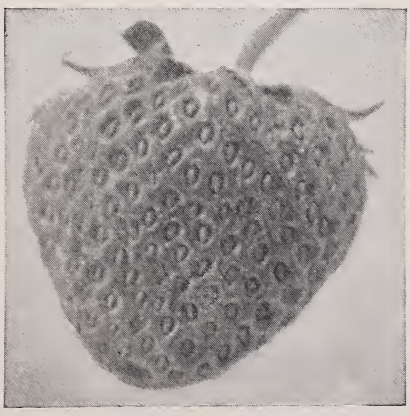
We have space for making only a few extracts. On page 372 it says:

"Some doubt has always existed as to whether plants normally propagated vegetatively by cuttings, slips, buds, etc. could be improved or permanently modified by a selection of these parts from certain individuals or parts of individuals by methods similar to those used in seed propagated plants. Each joint of a plant with its bud and leaf attached, possesses in most cases the faculty of growing into a new plant much like the parent. These new plants vary the same under environmental influence as do individuals produced from seed and while parts of the same seedling, still they are in a physiological sense distinct, each possessing individual characteristics and constitutions depending on the conditions under which they were grown. As is well known even branches of the same tree may differ in many characteristics and while such variations are not commonly recognized when slight yet in certain cases they become very marked and are then easily distinguished being known as 'bud sports.'" Page 373 reads: "Every one who propagates plants by cuttings (or runners) knows that hardly any two of them possesses exactly the same characters. Starting with two rooted cuttings from the same plant and growing them under as nearly the same conditions as possible one may give a plant that will bloom freely, forming flowers of large size and its leaf development may also be perfect while the other may be a vegetable runt, lacking in vigor of leaf and utterly unable to give anything but small and imperfect flowers." Page 357: "If such variations are desirable they may be perpetuated by budding or grafting." Page 355: "The unity of the individual taken as a whole is of prime importance in selecting and should be clearly recognized by every one in striving to secure Improved *Pedigree Plants*." Page 368: "Improvements effected by selecting a variation may be slight in one generation but as before explained if these slight improvements are continued year after year very marked improvements may result in the course of time."

"It is the slow and patient care and selection day by day which permanently ameliorates and improves the vegetable world. Nature starts the work, man may complete it."

We cannot spare the space to quote further but the words Pedigree in plants and Pedigree in seeds and cuttings are fully endorsed and commended. Photograph illustrations are given to show the remarkable results obtained by the Department in continuously selecting the ideal plant both in seeds and buds for propagation. It concludes as follows:

"Every farmer and horticulturist should devise for each crop a systematic method of selection that the general crop



Clyde.

may be grown continuously from selected PEDIGREE STOCK. All common agricultural crops respond to skilful selection and in every case valuable results will doubtless reward the agriculturist's attention to this principle."

If you wish to investigate further along these lines send to MacMillan Publishing Co., 66 Fifth Ave., New York, and order the books entitled "Plant Breeding," "Survival of the Unlike," "Lessons with Plants," and "Evolution of Plants," by Prof. L. H. Bailey, Professor of Horticulture in Cornell University, and probably the most eminent horticultural writer and investigator of the present age.

THE PROPAGATING BED.

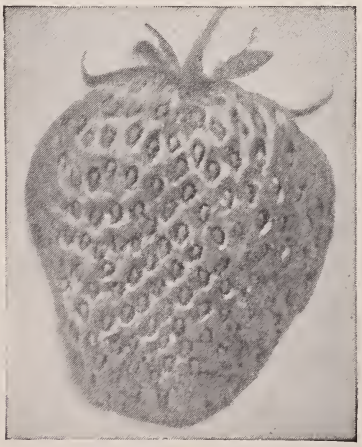
Every fruit grower should propagate his own plants as far as possible. He should grow them expressly for plants from the best strains obtainable. While there are few nurserymen or fruit growers who have the facilities or experience which will enable them to select and breed up plants along the lines pointed out in this booklet yet he can for a very small sum procure enough of these thoroughbred plants to start a propagating bed and thus have them on the ground at the time needed for transplanting next year.

A loamy soil is the best. Make it moderately rich with barnyard manure. Set the plants in rows not less than four feet apart and 24 inches apart in the row. As soon as the plants are set spray them with Bordeaux Mixture to kill all spores of rust and fungi which may find a lodgment on them. An atomizer is the sprayer to use. Let the runners spread out in all directions and keep them layered by placing a small stone or clod of earth on them. They should be mulched in the fall as soon as the first freeze comes. You only need to shade them to keep the ground from thawing. When the ground is frozen deeply in mid-winter put on more light chaff or straw so as to hold the frost in the ground and keep the plants from starting until you get your ground fitted. If the plants are dormant when set every one is sure to grow. You may need to buy plants for this spring's setting but you should look a year ahead and grow the very best plants for future use. It surely will not pay you to use scrub plants when thoroughbred plants can be had at prices quoted on pages 29 and 30.

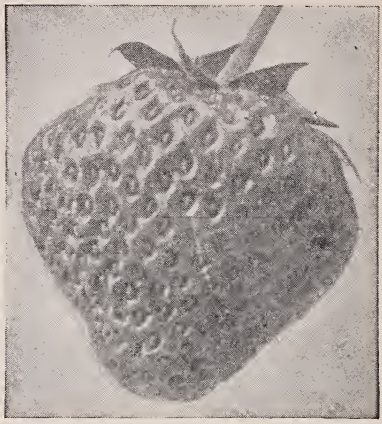
HIGH PRICES FOR BERRIES.

During the next three years berries will be scarce and sell at a higher price than for many years. The following facts are submitted as evidence that this is true in all localities.

During the hard times from 1894 to 1898 comparatively little fruit was consumed because labor



Crescent.



Brunette.

was not generally employed and wages were very low. Previous to that time fruit growers had ready sale at paying prices, while farm produce scarcely sold for enough to pay expenses so that many farmers rushed into berry growing.

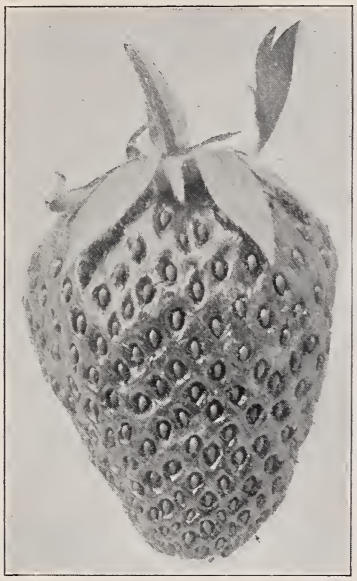
Nine-tenths of them went to some old exhausted bed or to the cheap, low land plant growers for their stock and then gave it only indifferent cultivation, resulting in a large amount of poor fruit being thrown on the market, and while it sold cheap yet for want of quality people ate very little of it and so prices ruled very low especially in the large cities.

Conditions are now changed. Never in the history of the country was there such a boom in all kinds of business. Labor is everywhere fully employed at increased wages and everybody has money to indulge in luxuries. General farming pays well and the stock and dairy farmers have plowed up their berry fields and gone back to their legitimate calling. The great freeze of 1899 ruined millions of trees and thousands of acres of berry fields. The great floods and excessive hot weather of last spring destroyed hundreds of acres of spring set plants entirely and this was followed by the worst drouth ever known in July, August, September and October. Very few fruit growers have plants sufficiently rooted for their own planting while those of nurserymen not favored with irrigation facilities are almost worthless, and so the planting of this spring must of necessity be far less than for many years.

Thus while the production has been decreased many times the people, by reason of unparalleled prosperity, are able to pay and will have to pay large prices to get desirable fruit. These conditions must last several years. There has not been such an opening in many years as there is now for progressive wide awake young men to get a start in the world at growing fancy berries as pointed out in this pamphlet.

THE RICH MAN

gets rich because he gets the best soil, uses the best tools, sets the best plants which produce the best fruit and sells to the best people who will pay the best prices to get the best things. His customers are not slow to learn that he can be relied upon to furnish the best in the market and know they must pay him the highest price to secure his products. He becomes rich by getting a large profit on everything he touches and employs labor enough to do everything at the right time and in the right way and is always ahead with his work.



Warfield.

THE POOR MAN.

The very poor man is poor because he surrounds himself with a poor home on poor soil, uses poor tools, poor seeds, poor plants, gives poor cultivation and always has a poor crop of poor fruit and sells to poor people who are contented to buy poor stuff if it's "cheap" and thus he remains always and eternally poor.

THE FRUIT GARDEN.

I pity the mother of a family who has to prepare 1095 meals every year with resources limited to the pork barrel, potato bin and bread tray. If she could only step into a fruit garden and find an abundance of asparagus for April and May, delicious strawberries for the next month, and then raspberries, blackberries and grapes in succession until frost comes, giving a feast all summer long, with canned fruits in abundance for the long winter months, the whole question of what to get for a meal would be solved.

The way to the husband's affections and that of the children is right down through the stomach. Fruit eaters are always good natured. A fruit diet during hot weather means a clear head and strong body. The rich fruit acids cool the blood and are the great panacea for aches, pains and the "blues." It saves "family jars," doctors' bills, and enables a person to accomplish more work. It will keep the boys and girls contented at home They see all these nice things in the town and forget they are products of the farm. Nothing adds so much to home life as a fruit garden.

A small plat of ground, a few strong fruiting Pedigree plants of early, medium and late varieties, a little delightful recreation in the cool of the evening in caring for them and the pleasure is yours. To enjoy them you must see them growing. To see the great beauties begin to turn red and peep out from under the foliage so coquettishly is a great treat.

"Buy them cheaper?"—Let us see about that. You furnish the land and manure and I can buy the plants and do all the work, paying regular wages and have all the berries ready to pick for much less than one cent per quart throughout the season. They will be at your door. No going without because you have no time to go after them. No expense for boxes except what the children need to pick and take to town to buy their school books with. A berry garden will furnish the family more real luxury than you can buy with several acres of wheat. Give it a start this spring.

Farm for sale.—The way to sell a farm is to make the would-be purchaser feel that he would like to own it. A display of fruits will contribute more to that end than any other one thing. The cost is trifling compared with inducements to purchase.

DOLLARS AND "SENSE."

It is important that you comprehend the difference in profits between intensive fruit growing as taught in these pages and the common methods of the average fruit grower Take one thousand bushels of berries as the basis of calculation for comparison.

The average crop under ordinary methods is from 50 to 75 bushels per acre, and so to produce the 1000 bushels we must furnish and fit at least 13⅓ acres of land. You must then buy and set 93,300 plants, (7000 to the acre). The cost of picking and marketing berries grown in the old way is always greater because you must go over so much more land for the same amount of fruit, and on the market you must accept what the purchaser sees fit to pay. You cannot secure regular customers at an extra price for common fruit.

To produce one thousand bushels by these improved methods and basing calculations on my own experience I should not think of using over four acres of land, (250 bushels per acre) and should therefore have to purchase and set only 28,000 plants. My crops have rarely dropped as low as that and have exceeded five hundred bushels per acre. Now I should sell this fancy fruit at from three to five cents per quart more than the common fruit grown by the old method and can hold regular customers who are glad to get this grade of fruit at the advanced price.

While it does cost some more work to give this intensive culture, yet the **extra price of $960** received for the fruit would pay for the entire cost of plants. use of land, manuring, marketing, etc. and leave me more than the gross price of common fruit for net profits.

As these plants would be grown in hills or hedge row they would not become exhausted by seed or fruit bearing and would produce large crops for three or four years while by the old way the beds generally cease to be profitable after the second year and must be plowed under and re-set.

These comparisons are not exaggerated, for in this calculation I have taken the larger estimate of common crops—75 bu. per acre—and the smaller amount grown by the improved method—250 bushels per acre and the lowest per cent of gain on quality—3 cents per quart, which gives a very conservative comparison.

SHORT CHAPTER ON "DON'TS."

Don't try to lift the whole world at once but only as much of it as will afford you profit and pleasure. Don't imagine you must have all the fancy tools to start with; you will be able to get them later. Any good farm tools will answer the purpose. Don't set any more plants than you can manure the ground for and cultivate thoroughly.



Don't forget that one acre of rich land set with Pedigree Plants and given thorough tillage will produce more clear profits than five acres of ordinary land set with scrub plants.

Don't forget that while many markets are glutted with poor fruits dealers find it exceedingly difficult to get really fine fruit and are hunting for the man who can produce it.

Don't forget that you can talk Pedigree Plants and high tillage to nine-tenths of the fruit growers till Doomsday and they will keep right on in the old ruts traveled in by their fathers and grandfathers and use scrub plants and give poor tillage and thus leave the profits to the "up-to-date fruit grower."

AN IMPORTANT QUESTION.

The question sometimes arises whether a "Pedigree Plant," with its high breeding and culture, will succeed on ordinary land with common cultivation, as well as common plants?

We might answer this question by asking another. Would a perfectly sound horse, which had been bred up carefully from the days of his coltship, be as valuable and pull as large a load as a broken-winded, ring-boned and spavined stager? Pedigree Plants, being possessed of a strong constitutional vigor, will adapt themselves to changed conditions much better than scrub plants.

Climatic conditions will always be a factor in fruit growing and may defeat the best laid plans, but since I commenced breeding up plants sixteen years ago I have never lost a crop nor had an unprofitable season.

BEAUTIFUL BERRIES.

The most beautiful berries are true to type, above medium and all of the same size. That is the advantage of Pedigree Plants. Their vigor enables them to bring their berries to the full size of their variety. Some excessively large berries are needed for advertising purposes to get people to talking about you, but the average family prefers above medium in size, good texture, and rich flavor, hence the successful grower plants most largely of the medium sized varieties, and then gives careful culture to make them all grow large. These are the money-makers.



HOW TO SELL FRUIT.

Never give the market a thought until the berries are ready, but spend your time growing such a grade of fruit that customers will wait for your coming. You will not have to run around to drum up trade.

If your fruit is right you will not have any trouble in arranging with the leading dealer to handle all you have. Get a neat circular letter printed describing your berries and have one left with every family who is a customer of your dealer, telling them where they can be had Have notices put in the papers to the same effect. Our "squib" is generally one line: "To be happy eat Kellogg's berries," sold at "Wilson's." Put this in the paper in a dozen places. Of course it costs a little, but it sets everybody to thinking of you, and the extra price and ready sale meets all the bills, and you are ahead in the end. The mere fact that this will bring the dealer a large amount of extra trade will make him glad to pay you all there is in it to secure the agency.



Cobden Queen.

Pack your fruit honestly in a nice clean box and don't forget to put some big berries in the bottom. The people will find them and give you a good deal of credit. If you ship to a distant city secure a reliable dealer in the same way and have a neat stencil or label which shall act as a trademark so that people will become accustomed to it and insist on having your brand.

You will have no occasion to make consignments to a commission house but will be put to your wits' end to get enough fruit to supply regular customers.

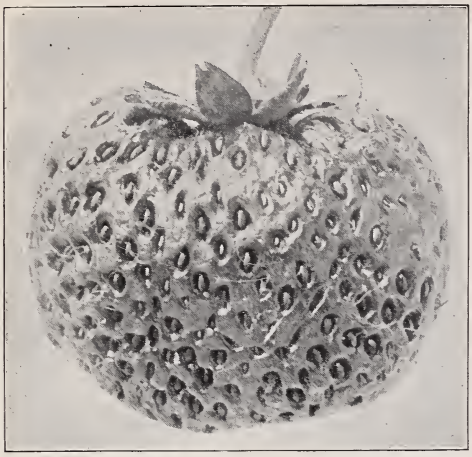
If you are so unfortunate as to have common fruit, do as the other fellow does; sell it for what it will bring but never put your name on it so that people shall find out that it came from your establishment. A good reputation is a splendid stock in trade. It gives you the advantage on the market and causes people to pass by the other growers and patronize you.

Have a neat letter head and bill head to use when you have occasion to write a customer or present a bill. Take pride in your business and do business in a business-like way.

SELL DIRECT TO FAMILIES.

I have made most money selling direct to private families. I never failed to secure for customers nearly every family on all the principal streets. Other growers would tag around after me and offer my customers their berries for two or three cents less per quart but I paid no attention to them.

Always insist on a fair price and back it up by a comparison of values and you will have no trouble in getting and holding customers. Be firm and courteous under all circumstances; don't get angry if they do quit you, but express your regrets and leave them in a mood in which they can come back without prejudice. It costs nothing and it is pleasant to be known as a gentleman with whom everybody likes to deal. Don't cut prices, but look up new customers if you have a surplus of fruit. Don't peddle indiscriminately from house to house but have regular customers whom you supply daily.



Manwell.

Furnish each Family with a ticket printed on manila card board, about three inches wide and eight inches long, to be hung in a convenient place by the kitchen door where it can be found without delay. This prevents all bickering and dispute about price of berries purchased. It saves making change and loss of sales because ladies do not always have change. It suits the "man of the house" because it furnishes a voucher as to correctness of bill. The family will buy double the fruit when this ticket is used and it assists in holding the customer. Insist on pay every week except when bill is to be presented at the store or office of customer at close of season.

The following is the form of the ticket:

DON'T FORGET TO BRING THIS CARD.

TIME IS PRECIOUS.

When you hear our bell ring, kindly HAVE THIS CARD READY AND BE AT THE DOOR, so we can make the proper entry and deliver the fruit with as little delay as possible. Payment expected every Monday.

M_____

In Account with R. M. KELLOGG.

Date.	Quarts Wanted.	KIND.	Dr.	Cr.

When I commenced selling berries in this way my customers took one or two quarts the first day; but very soon increased to three or four quarts and often more. The berries were so large and delicious they not only insisted on having them at every meal but the dishes had to be re-filled and this made the quarts disappear very fast.

Insist on a good price for fancy fruit and you will always get it. You will rarely or never lose a customer but you will keep on getting more patronage as the quality of your fruit becomes known. Nine-tenths of the people will buy the best fruit they can get, and a reasonably high price cuts no figure if they can only know where to get a regular supply. Any groceryman will tell you he always sells his fancy fruit first and the low grades last.

The word goes from one family to another and to their friends in distant towns, where families will club together and have several bushels shipped daily by express and divide them among themselves. I have always had a large trade of this kind.

When selling one kind of fruit engage the next coming on, so as to have everything sold in advance. You will soon find all your time occupied in selling fruit and directing work, and you can hire the drudgery done by people of less enterprise.

Pay your men good wages, so they will prize their place, but let them understand that everything depends on first-class, careful work. When they see the drones being weeded out they will take the hint; and don't forget the worst use you can make of a man is to quarrel with him and call him hard names. Just say to him kindly that his services are no longer needed, and let him go.

A neat personal appearance is a good stock in trade. Wear a good business suit and keep your shoes blacked, and be in condition to approach a wealthy family and make a good impression, and never offer a customer berries in an old dirty box. Keep your wagon as neat and attractive as possible.

SELECTING A SITE.

I do not care to spend much time on this subject. Everybody knows good land when he sees it. How would it do for a garden? Hard flinty clay or light, drifting sand are bad. A light clay or sandy loam are best. Stony land is good if it does not interfere with cultivation. Cold springy land is bad. High land, that is, land which is higher than any in the immediate vicinity, is best. Cold air runs off the hills onto low land precisely the same as water, so that a low piece of ground with high land all around it should not be selected. Level land with no high hills near it will do. A south incline matures fruit early and a north incline makes the same variety later.

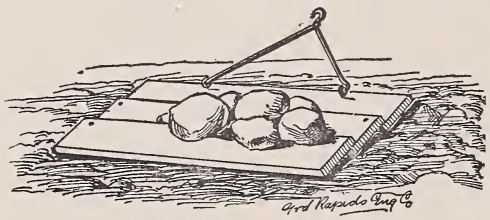
MANURING THE GROUND.

Stable manure is the best. I should prefer to have it well rotted, but that cannot always be had. Get the best you can find, even if you have to draw it as fast as made. Spread it evenly over the ground during the winter and early spring. Do not put in piles. The deep snow is no objection to spreading The winter and spring rains will wash the juices into the ground so it will be incorporated with the soil



Bubach.

where the plants can use it. Before plowing rake off all coarse straw so that capillary attraction which draws water from the lower subsoil shall not be cut off. Water will not pass up through a mass of straw if plowed under. Be very careful about this. If you can't get stable manure apply broadcast from 400 to 800 pounds of pure, fine ground raw bone meal and not over fifty bushels per acre of unleached hardwood ashes and cultivate in before plowing. If commercial fertilizers are used select those rich in potash and phosphoric acid which are always conducive to fruit formation.



The Floater.

The Roller.—You cannot properly fit land without a roller or floater. The plow and harrow leave the ground too loose and do not sufficiently exclude free air and capillary action will not bring the water up from below. The particles of earth must be brought near together. If you do not have a roller, take three two-inch planks about seven feet long and one foot wide; bolt or spike the edges together like the siding on a house, and hitch a chain to each end and load it with as much stone as the team can draw, and go over the surface. On many soils it will do better work than a roller. **Do not attempt to set plants in loose earth.**

HOW PLANTS FEED.

About ninety-five per cent of plants by weight comes from the atmosphere and only five per cent from the soil. There are about sixty ingredients in the soil which plants use but they get along very well if only sixteen of them are present. These ingredients are found in abundance in all friable soils, except potash, phosphoric acid and nitrogen which must be replenished by manures.

These foods must be dissolved in the soil water and are sucked up by the little hair roots and passed from cell to cell through the center of the plant to the leaves by a peculiar force known as osmosis. The leaves are the stomach and lungs of the plant and they digest the food by breathing the water away through little mouths on the under side of the leaves called stomatas and at the same time they take in carbonic acid gas from the air and combine it with the soil foods and this digested mass then passes out of the leaves under the bark building up the little cells in the plant and fruit which constitutes the growth.

This process in digestion can only take place in sunlight, so plants cannot grow and produce fruit unless they have plenty of light and air. They soon turn pale and die in the dark.

For this reason we must set all plants far enough apart for the sunshine to reach every leaf and fruit bud. The leaves of a strawberry plant naturally droop over so that the sun shines on the crown and therefore they must not be allowed to mat so thickly as to shut out the light.

WHY WE PLOW.

We have shown that plants take their soil foods dissolved in water. If all the plant foods in the ground were soluble and available at one time, the rains would wash them all out and the land would soon become barren. It would do very little good to apply manure because it would be lost before the plants could use it.

Nature has provided for this by making a chemical change in the foods and they become insoluble in water, at the same time a resolvent was provided to make them available as fast as the plants could use them, and this "resolvent" is the oxygen of the air. When we plow, harrow and roll to crush lumps, it not only opens the ground so it will hold more water but the oxygen comes in contact with the soil grains just before the plants are set and they can then get plenty of food and will grow very fast.

No matter how vigorous your plants may be they will not produce large crops of fruit unless they can have food and moisture and this can only be secured by thoroughly manuring and preparing the soil.

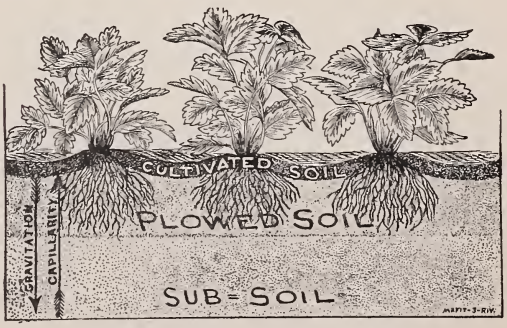
WHY WE SUBSOIL.

Subsoiling is to follow the common plow with one which only breaks up and pulverizes the lower strata and leaves it at the bottom of the furrow. This subsoil must not be brought to the surface as it contains but little plant food. By breaking it up we actually create a reservoir of water under the plants which draws up by capillary action to tide them over the drouthy season. The soil grains being separated they will surround themselves with a thicker film of water. As an illustration put some small gravel stones on a wet cloth and see the water pass up and quickly cover them and remain so as long as the cloth is wet.

Sometimes when the ground has been plowed the same depth for a number of years the bottom of the furrows becomes glazed and baked so hard the water cannot settle through it or come up from below by capillary action and when heavy rains come the plants are drowned out and during a drouth can get no water from the subsoil, all of which is remedied by subsoiling.

Some soils are injured by subsoiling, as a waxy clay or gumbo soil, which, when very wet will run together in a solid mass. Earth worms tunnel such soils and keep them porous and it is better not to disturb them. A loose gravel or light sand is already as loose as it should be to secure capillary action and will be injured by making it looser.

A composition of sand, gravel and clay or what is called "hard-pan" or any soil so dense you cannot dig it with the hands would be very greatly benefited by breaking it up. I urge subsoiling wherever the conditions permit it. It should always be done very early in the spring so the rains will fill the "reservoir" before the drouth sets in.



WHY WE CULTIVATE.

We cultivate to destroy weeds, prevent the ground from drying out and to admit the air to the

soil so as to keep the plant food soluble. Having properly prepared the ground in the spring the air will find its way through the soil if you prevent a crust from forming on the surface. We want plenty of root pasturage for the plants and so we must not stir the ground more than two inches deep to break the crust and keep the surface covered with the loose earth mulch, so the water cannot rise to the surface to be carried off by the sun and wind. *CULTIVATION DOES NOT ADD* any water to the soil but prevents that already there from getting away.

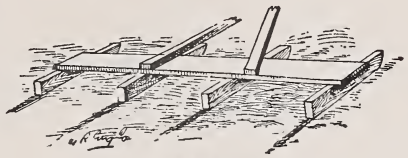
Water is moved in the soil by two forces. Gravitation pulls it down into the ground and capillary attraction draws it up to the surface again. Capillary means a hair-like tube or passage. The irregular shaped soil grains have a minute passage around them and the molecular force causes the water to come up through these hair-like openings just as the oil flows up through the wick of a lamp. The water will not rise in this way unless the soil grains are very close together. Now when we cultivate about two inches deep we make the surface so loose that while water draws up above the roots which are in the firmer soil it must stop as soon as it reaches the loose earth, because capillarity is overcome by gravitation and the water must stay below for the use of the plants.

When the lower strata of the soil is quite wet as it generally is in the early spring, the water will draw up fast and the soil gradually settle down by having the soil particles slip around and adjust themselves close together and the water draws up to the surface so the hot sun and wind will carry it off just as the flame of a lamp burns the oil as fast as it rises in the wick, and for this reason we must cultivate more frequently when the lower strata is wet than later in the season when it is dry. It is a great mistake to suppose we must not cultivate until the ground gets dry. We cultivate every week to prevent the soil from getting dry, and always after every rain.

We do not need irrigation to produce the finest fruit. Grow your berries in hedge row or in hills and maintain the dust mulch the first season and mulch in the fall with straw and let it remain on in the spring to keep the berries clean and to hold the water down until after the berries are picked and then burn it off and cultivate as described on another page. In the spring we cultivate every week and oftener during a drouth on spring set plants.



Photograph of a Four Quart Plant.
The foliage was removed to show the berries.



The Marker.

Marking off the ground.—Have your ground properly firmed, leveled and rolled so the perfection plant setter will set the plant exactly the right depth, or if you use the dibble or spade you can determine quickly the right depth for setting plants. Mark as light as possible where the rows are to be. For this purpose we take a board about one-half inch thick, eight or ten inches wide and long enough to mark four rows at a time. Make four short sled runners and nail them under the board the distance the rows are to be apart, and nail shafts or handles on the top to draw it with. A man can draw it all day without fatigue. The object of using a thin board is to make it bend and accommodate itself to the uneven surface of the ground. Get the first row perfectly straight and let one runner go in the last mark as a guide. This will make all the rows exactly so far apart, so that late in the season when your plants get larger you can adjust the cultivator so as to do thorough work by going once in the row.

There are four methods of growing strawberries: The hill or single plants, the hedge row, half matted row and full matted row.

HILL CULTURE.

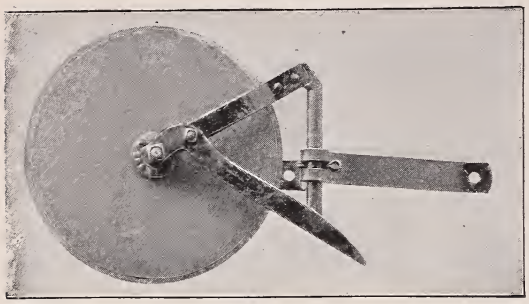
Hill culture may be defined as a method of consolidating many small plants into one very large plant and many small berries into one large berry. As a rule, when you cut off a runner and check the plant from multiplying itself in that way, it will, if in full vigor, then try to multiply itself by seeds or fruit and proceed to form a new crown and fruit buds and in this way will build itself up to immense proportions. We have often had plants so large a bushel basket could not be placed over them without doubling up the leaves, and they will produce from two to four quarts of very large, high flavored and bright colored berries to the plant.

The conditions for hill culture are that plants must be in strong fruiting vigor. Common plants will not stool up but make too many runners and add to the work of keeping them off. The soil must be very rich and high culture given. Do not try to grow in hills on poor ground.

Set plants in rows 30 inches apart and 18 inches apart in the row or 30x30 and cultivate both ways; cut runners before they make leaves or have a chance to strike root. The runners are kept off throughout the season.

THE HEDGE ROW.

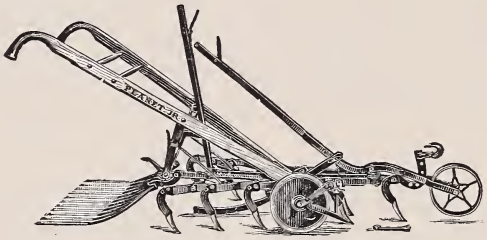
The hedge row gives very nearly as good results as hill culture and involves less labor. The plants are set in rows from 30 to 36 inches apart and 20 to 30 inches in the row. Those making runners freely, the latter distance The first runners should be thrown around so as to fill the rows in a straight line and let the plants stand six to eight inches apart and then all later runners are cut off very fast with the rolling runner cutter which can be readily attached to the cultivator, but we prefer to attach it to a garden wheel hoe or any one can easily make a



Rolling Runner Cutter and Leaf Guard.

wooden wheel and frame which would answer the purpose well. The runner cutter is a steel disk ten inches in diameter with leaf guard and out rigger for attaching it to the cultivator. Price $1.50.

The advantages of growing in hills and hedge row are that each plant has plenty of light with space between the rows for abundant root pasturage. Nearly the entire surface can be stirred with the cultivator and kept covered with the loose earth mulch so plants are never injured by drouth and all weeds destroyed with the least possible amount of hand-work, and cutting runners with the wheel requires very little time.



Runner Cutter on Cultivator.

When the runners are cut the plant not only makes new crowns and buds but it makes more roots and sends them down deep and far out in search of food to bring their great berries to perfection.

The plants produce heavy crops for several years without re-setting because they have plenty of roots to sustain them. There are no more seeds in a large berry than in a small one and in this way nearly every berry grows to a large size so that they are picked as soon as ripe; and as there are only comparatively few seeds maturing at any one time exhaustion in seed bearing is in a great measure prevented; and thus the bed can be fruited three or four years without re-setting.

THE FULL MATTED ROW.

Probably three-fourths of all strawberries are grown in this way, but progressive fruit growers are fast finding out that it is a mistake. It is only justifiable when the land is too poor to grow them in other ways. Make rows four feet apart and set plants 18 to 24 inches in the row. Let the cultivator go in the same direction every time so as to throw the runners around without tangling them and as they root narrow up the cultivator.

The objections to the full matted row are that when the row is full a strip of ground some twenty inches wide is left which cannot be cultivated. The crust forms over this excluding the air from the roots and soil and the water draws up to the surface so the roots are dried out and injured. If the top of the ground is dry the runners will not send down their roots but continue to live on the mother plant, forming several plants on the same runner which blows around in the wind and does not take root until the fall rains come, and then it has no time to make and perfect its fruit buds and roots and so the next season cannot bring its berries to full size and maturity.

If the ground is rich the plants will mat so thickly that sunlight is excluded from the lower foliage and the crowns. Fruit buds which will not form in dense shade will be lacking. Many of the berries are too small to pick and rot on the vines and sap the vitality of the plant, thus preventing the better berries from growing to full size.

I urge all my customers who want to make a reputation for growing fine, large, even sized, beautiful berries to adopt the first two methods.

SETTING PLANTS.

The great point is to have the roots straight and separated from each other and imbedded in soft mellow earth so that new feeding roots can start out in every direction without any hindrance and thus secure a vigorous growth at once.

The spade is quite generally used, but in the hands of a careless man it is about the most villianous tool ever used for the purpose. The first objection is that when forced into the ground, moved back and forth and sideways it makes a glazed surface and when closed by the foot in the ordinary way incases the roots in a veritable pocket and if dry weather follows the glazed surface will dry out and no feeding root can penetrate it. Dig a plant up a week afterwards and find the little white rootlets tracing up and down the old root to find a crack in this "plastered wall" through which they can penetrate to the mellow soil just beyond. No good growth can be had under such circumstances. If the ground be moderately loamy or clay the weight of a man will not close the bottom of the cavity.



The Wrong Way



A "Rat Home:"
(Bottom of hole not closed.)

Set a plant and step on it in the usual way and then dig down by the side of it and see how many "rat homes" you will find with roots hanging in the free open air. You will be surprised to find that often more than half are exposed. Another objection is that the lower ends of roots are buried too deep. The roots of a plant spread out in all directions and coming near the surface feel the warmth of the sun and send out feeders much sooner. Notice the natural tendency in roots to run near the surface when taking them up in propagating bed.

Use the spade this way.—Let a man go ahead of the setter, force the spade straight down two-thirds the length of the blade, then draw the handle towards him about ten inches, force one inch deeper, push from him far enough to make the earth stay and withdraw the spade, thus leaving the opening so the bottom is easily closed. Quickly insert the hand rub off the glazed surface and take a few roots from one side of the plant, holding crown in left hand, deftly drag the roots sideways into the opening and when all spread out evenly and center of crown just even with surface of ground quickly fill the cavity,



Too Deep.



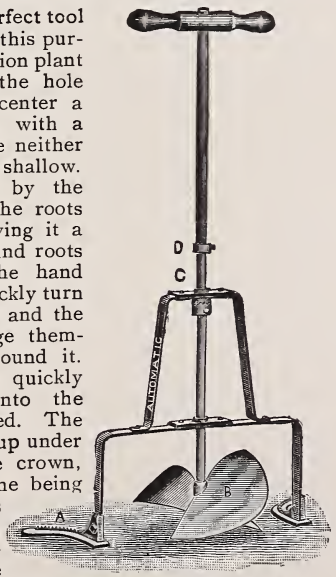
Too Shallow.

piling the earth so that when stepped on it will be perfectly level around the plant.

If the crowns are too low they will rot or make a feeble growth. If too high the upper roots will be exposed to wind and die. The new roots always start from above the old ones and if the plant is not in the ground deep enough they will not start. (See engravings.) If a little too deep new crowns will not start on the side of the plant, and if a little too high it will make only a feeble growth. I urge great care in doing this work.

Leaving the ground without cultivation for a few days in a dry time kills and stunts more plants than any other negligence you are liable to commit. To have a boy drop plants ahead of the setter, often leaving them five minutes in the bright sun and drying winds is sure death or permanent injury. Don't do it. Put a piece of manila paper in the bottom of a basket and pour in a quart of water and then open the bunches of plants and set the roots in it and take them out as needed. Do not let them stand in water only a few minutes before setting as they become soaked and injured. If the weather is cloudy and roots moist do not wet them at all.

The most perfect tool ever invented for this purpose is the perfection plant setter. It digs the hole leaving in the center a cone. It is set with a guage so it can be neither too deep nor too shallow. Take the plant by the crown and hold the roots upside down, giving it a slight quick jerk and roots will fall over the hand when you can quickly turn it over the cone and the roots will arrange themselves evenly around it. Then the dirt is quickly brushed back into the opening and firmed. The cone comes clear up under the center of the crown, the bottom of cone being about five inches in diameter and roots so distributed there can be no tangled mass, as it gives a circumference and immediate root pasturage of over 15 inches.



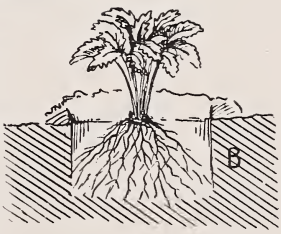
The perfection plant setter does the work faster than any other machine that will do it equally well.

The only requirements are that the ground shall be properly fitted by rolling and free from sod, straw, or anything which would gather on the edges of the blades in quantities so as to tear the cone to pieces. Small stones do not interfere if not too many. Price of setter, $3.50.

An absolute necessity.—I wish to impress the necessity of loosening the earth around the plant by cultivating *immediately* after plants are set so that capillary action will bring the water up above the roots and collect under the loose earth or dust mulch and nourish the plant during the trying ordeal of transplanting and becoming established. Where you step around the plant to firm it about the roots you have left the particles so close together that the water draws up to the surface with great rapidity to be carried off with sun and wind. I do not wait a single hour after plants are set before cultivating.



Brandywine.



Ready for Covering.

PICKING BLOSSOMS.

It is of the utmost importance that blossoms be removed on spring set plants as soon as the buds start. The production of pollen and receiving fluid of the pistil is the most devitalizing and exhaustive process the plant is ever called upon to perform.

They form all their fruit buds in the fall ready to bloom out on the first warm days of spring. We then take them up for transplanting and before they can make roots to sustain them the devitalizing process begins and is sure to lessen fruiting vigor. We are always very particular about this. It will retard the growth all summer, and greatly shorten next season's crop of fruit.

INSECTS.

The only insect likely to do serious damage in strawberries is the white grub or larvæ of the May beetle. The larvæ feed on the roots of grass and are often found so thick in old June grass sod or pasture as to destroy it. They are passionately fond of strawberry roots and great care should be exercised not to set plants on ground infested with them. They remain in this larval state for two or three years, doing the most damage the second season.

Grubs similar to these are often found in manure and old wood, but that kind does not eat roots and is therefore harmless. As there are so many kinds it will be safer to send some of those found in your ground to the entomologist at your State Agricultural



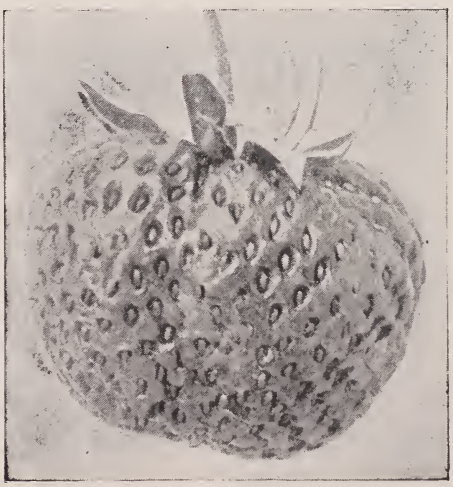
Spraying our Propagating Beds

All raspberries, blackberries, strawberries and other fruits are thoroughly sprayed. No fungi, no disease, no insects.

College and ascertain if they are the true May beetle. They can be sent by mail. They very rarely or never lay their eggs in fresh cultivated ground so that if the land has been in any hoed crop for one or two years previous there will be no danger. Examine old strawberry beds carefully before resetting.

SPRAYING.

All blight and rust are of a fungus growth. Strawberry rust or leaf blight has been the worst scourge growers have ever had to contend with. It is widely spread throughout the country. It multiplies by means of spores which are carried on the leaves and during unfavorable weather, especially when showers are followed by bright sunshine it spreads very fast. The foliage of most of our heavy fruiting varieties are especially sensitive to it. It is safe to say there are no plants in the country free from this scourge unless they have been sprayed and these spores destroyed. I am confident if the propagating bed is thoroughly sprayed during the summer with Bordeaux Mixture that the spores will be so far destroyed that rust cannot manifest itself on plants when they come into fruiting. A plant with its leaves covered with this fungus cannot digest its food so as to mature fruit. The leaves are the digestive organs of the plant and if diseased or injured the plant can make no growth.



Greenville.

It is settled definitely that no fungi (rust) can live when it comes in contact with copper sulphate—Bordeaux Mixture. Our plants were sprayed as soon as set and at the beginning of winter they were as bright and green as in June.

We use the Eclipse sprayer, made by Morrill & Morley, Benton Harbor, Mich. It covers every leaf with the finest mist so that no spores of fungi or insects can escape.

The new atomizer which can be had at any hardware store for $1.25 or of Morrill & Morley is a hand machine of great value and very cheap. It is sufficient for the propagating bed and can be used on quite a large area.

For spraying raspberries, blackberries and other bush fruits large wheels are put on the cart so it can pass over the row. One nozzle shoots the spray down on the top while one on each side sends it against and under every leaf. A high pressure on the pump puts on the finest mist. It is easy to advertise healthy plants free from fungi but they cannot be furnished unless sprayed.

When the State inspector made his official examination of our grounds, as required by law, in conversation with the proprietor he frankly admitted that never in all his experience had he seen such plants as these. Bear in mind he officially inspects every nursery in this state.

The following is the official certificate, a copy of which we place on every package of plants sent out:

CERTIFICATE OF NURSERY INSPECTION.

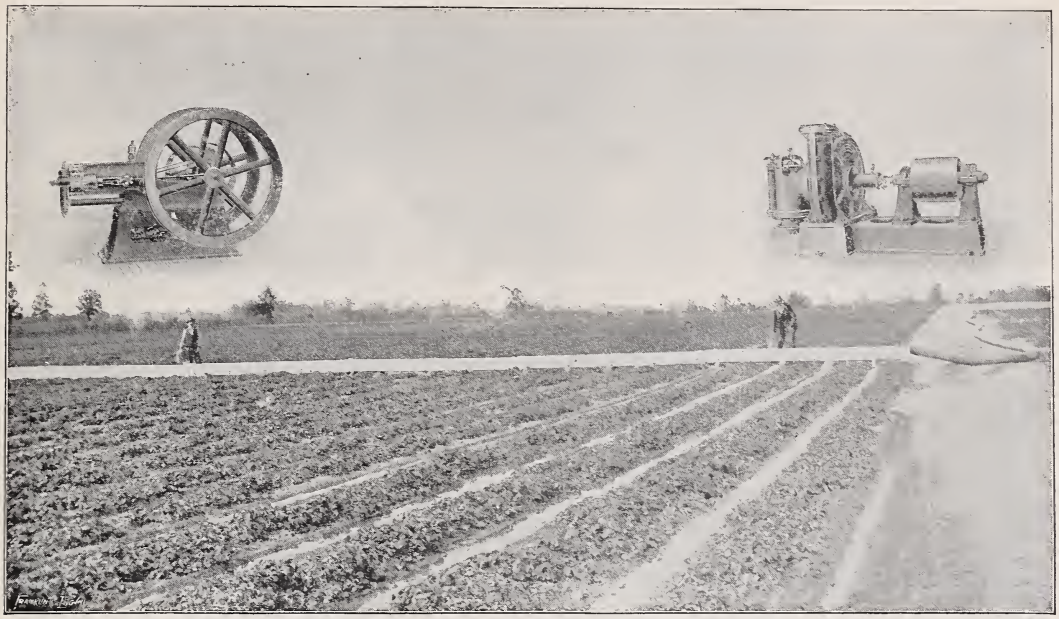
No. 38.

THREE RIVERS, MICH., Oct. 30, 1899.

This is to certify that I have examined the nursery, stock and premises of R. M. Kellogg and find no indications of the presence of any dangerous insect, pest or fungus disease.

(Signed) D. W. TRINE.

State Inspector of Nurseries and Orchards.



Irrigation Scene. Perfect conditions produce perfect plants.

IRRIGATION.

The largest crops and finest fruit we ever grew were produced without irrigation by holding the rains of winter and spring in the ground by frequent surface tillage and mulching quite heavily between the rows in winter which prevented evaporation the next season until after fruit was picked, but here our work requires new conditions. We are breeding plants with the view of improving their physical condition and they must be allowed to spread all over the ground and not be thrown around in a mat by the cultivator but each must have its own root pasturage and sunlight to develop the fruit forming habit.

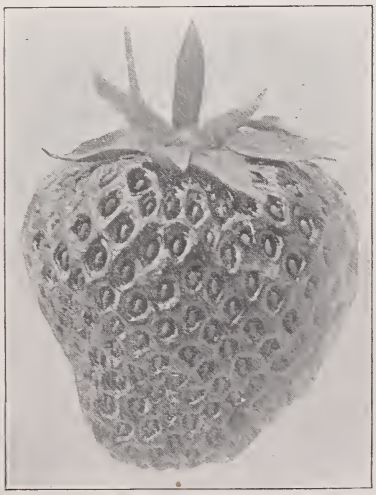
This can readily be accomplished by the fruit grower who has only a small plat and propagates from plants already bred to the highest standard. The dust mulch is easily maintained by the garden hoe but here we are striving to produce the best "Mother Plants" in the world, and we are going to accomplish it. It is now and shall continue to be the headquarters of fruit growers in this line.

The past excessively dry July, August, September and fore part of October kept the surface of the ground so dry that plants could not root and my correspondence with nurserymen shows that large well rooted plants are not to be had while our plants are the largest we ever grew because we were able to keep them perfectly healthy by spraying and the exact degree of moisture required in the soil at all times so that growth was natural and I have been able to develop the best quality in them. Our plant consists of a No. 6 centrifugal pump with a rated maximum capacity of 1400 gallons per minute, made by the Morris Machine Works, Baldwinsville, New York. The power is furnished by a twenty-five horse power gasoline engine, made by Olds & Son, Lansing, Mich. It is the most simple and perfect engine made. Needs little attention further than starting and stopping. The water is carried through a large cast iron pipe twelve hundred feet to near the center of the farm, hydrants being conveniently located and from these the water is carried through a ten inch hose made of heavy cotton duck to the sluice boxes as seen in the engraving.

These sluice boxes are made of three boards each twelve inches wide and sixteen feet long so that one fits into the other making a continuous trough.

They have gates and slides for the regulation of the flow of water which is let out from openngs in the sides into small deep ditches made with a ispecial plow for the purpose. The water soaks down deep from the bottom of these little ditches and as soon as they dry off the cultivator goes over it and holds the water from coming up. It then percolates out through the soil and raises by capillarity until it reaches the loose earth where the evaporation is stopped, holding the soil sufficiently moist so the plants are well fed.

Great care is exercised to prevent flooding as that would pack the surface and then it would dry out very fast.



Excelsior.



A Perfectly Equipped Packing House.

No plant exposed. No plant neglected. Perfect discipline and training in employes, with perfect facilities gets plants to customers in perfect condition.

About two thousand barrels to the acre is applied at one time which will last about ten days.

It only requires two men to place the sluice boxes as they are drawn on low wheeled wagons to the points needed while one man regulates the flow of water. Thus rain or no rain, our plants are always in prime shape. No drouth nor fungi, but only the ideal conditions required for rapid and healthy growth.



Glenn Mary.

MULCHING.

After the first freeze in the fall our propagating beds are carefully covered with straw where they remain frozen and dormant until the frost comes out in March when the digging commences.

DIGGING THE PLANTS.

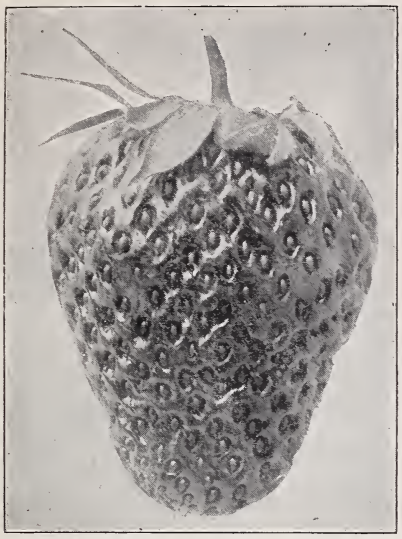
The straw is removed and old leaves and stems are picked off in the row because there is no danger of injuring the crowns in doing it then. A six-tined fork is inserted under the plant and it is lifted in such a way that no roots are broken nor crowns bruised. They are instantly picked up and put in a wet bag, so they are never exposed to sun and wind and the bag is carefully labeled and sent immediately to the packing house where they are cleaned, counted, tied in bunches, labeled and the orders are made up

The entire row is taken up and all old plants and any with immature roots are thrown out. Only perfect plants are sent to customers

THE PACKING HOUSE.

Our packing house was planned and built to give the very best facilities for making up orders, packing plants and getting them to purchasers in the most perfect condition It is 42x100 feet and each variety has its own separate stall where the plants are counted and tied in bunches and labeled, so it is impossible to mix varieties.

The atmosphere of the room is kept cold and damp by the floor being saturated with water so that in the short time used in counting plants and making up orders the roots never show the slightest dryness. The crates for packing are made of tough, light wood, after our own design so that leaves are exposed to air while the roots are imbedded in pure,



Carrie.

damp sphagnum moss and grow while on their way to their destination and arrive at any point between the Atlantic and Pacific Oceans in perfect condition.

Our men have become experts in packing and each department is under an experienced foreman and all under an efficient superintendent of many years' experience, so that all orders are filled with the utmost precision. It is absolutely impossible to dig and pack plants in the open field, exposed to sun and wind, as is very generally done by plant growers, and have them reach the purchaser fresh and vigorous. You want every plant to grow and have no vacancy in the field and there will be none with these plants if you set them properly.

PLANTS FOR THE SOUTH.

All of the leading truck and berry growers in the south use only northern grown seeds and plants for the reason that the northern summers are very short and hot and they acquire the habit of ripening their fruit several days earlier than the same variety propagated at the south.

The new runners will retain these characteristics for three or four years so that southern planters can get the benefit of this and propagate their own plants for that length of time and then renew their propagating beds with northern plants and thus be in the market several days in advance and secure the high prices, making a big difference in profits with very little extra expense.

The spring at the north being later than the south, plants remain entirely dormant that much longer and will endure shipment and transplanting in this condition with perfect safety and when put in the warm soil will spring into a fine growth at once. The old foliage of dormant plants is nearly all removed by trimming and packing and the new roots start immediately so the plant becomes established with feeding roots before it has foliage to be affected by the sun.

We take up plants as soon as frost is out of the ground—usually about the middle of March.

Northern growers cannot use southern plants successfully because they are in fruit in the south before ground in the north can be fitted for transplanting. While dormant plants can be kept even weeks in mild weather by heeling in, yet, after they have commenced to grow, it is difficult to save them in this way.

From points as far south as Maryland and Kentucky they are obliged to ship as early as February and March and even then plants have commenced to grow, so it is almost impossible to heel them in so as to keep them during the freezing weather of those months at the north. If shipments were delayed until northern ground could be fitted, the fruit would be half grown and at this period there is a change in the roots so that they very rarely succeed when transplanted at that time.

FALL SETTING OF PLANTS.

We wish it distinctly understood that we will not furnish plants for summer and fall setting at any price. People have sent here for plants in the fall giving them no time to establish themselves and form fruit buds and roots. In the spring blossoms start at once taxing the resources of the plant to exhaustion because of lack of rootage, and the berries secured so deplete the vitality of the plant that only a moderate crop can be secured the following year, thus injuring my reputation as a breeder of thoroughbred plants.

The Value of Pedigree Plants is in the potency of their pollen and general ability to develop fruit and I must insist that they shall have a fair chance to demonstrate their good qualities; for this reason we have decided to furnish plants only for spring setting.

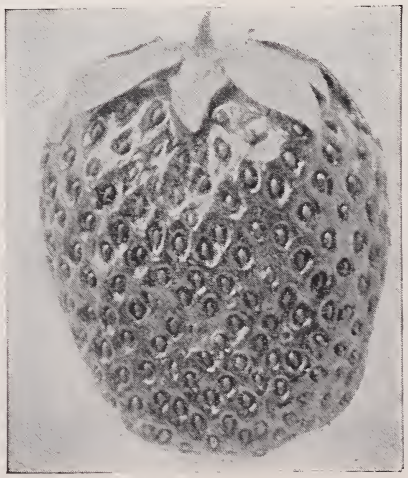
CARE OF AN OLD BED.

Plants grown in hills or hedge row will fruit heavily three or four years if good culture be given them and fertility is maintained. As soon as fruit is picked stir up the straw and get it dry and burn it off to kill insects and fungi and cultivate at once. The crowns of plants grown in this way being so prominent it is safer not to put much straw directly on the plants for burning.

The full matted row should have the tops mowed off, not too close, and mulch stirred up so it will dry and then wait for a high wind so the fire will pass over rapidly and burn all annual weeds, insects and fungi.

I wish to emphasize three things:

First. This burning must be done *immediately* after the picking season is over. The plants are now



Haverland.

utterly exhausted The old leaves and roots die, a spark of life remaining only in the crown. The plant remains in this dormant condition only a few days, when new leaves start and new roots come out, above the old ones. The old foliage is an injury to the plant because it is often more or less affected with fungi and the spores are liable to go to the new leaves and should therefore be destroyed.

It must not be burned after this new growth starts, or the plants will be killed or greatly injured.

Second. A good, strong wind must prevail, to drive the fire over the ground rapidly, when there will be no danger of heating the crowns.

If there is an abundance of mulch, it is better not to mow the plants off. Put the mulch on the row so it will destroy all the old leaves.

Third. To cultivate the same day of the burning. The pickers tread the ground down hard, making capillary attraction perfect, so the water will draw up to the surface to be carried off by the wind and hot sun and the ground will soon dry out below the roots and the plants will die.

I have heard of plants being killed by burning, but in every case some of these things have been neglected. We have burned over our beds every season for many years and never had a bed injured. In a few weeks the bed will look like a new spring set field. As all annual weeds are killed but very little hand work is required.

It is important to cultivate so as to throw about an inch of fine earth over the plants as the new roots come out above the old ones and the crown of the plant is raised up every year. This also acts as a mulch to conserve moisture. The full matted row should be narrowed up to about a foot in width.

WINTER PROTECTION.

In the case of strawberries it is not the freezing that does the injury. On many soils, especially clay, when the ground freezes all night and thaws the next day under the influence of the bright sun, the ground contracts and expands, and thus heaves the plants up, pulling the roots loose, which weakens them. Now if we place some coarse litter over the plants merely to shade them from the sun to prevent thawing during the day and the frost comes out very slowly, no injury can result.



Seaford.

The plant must have air for its foliage even if frozen solid, hence, any heavy, dense mass like manure will smother and injure it. The strong ammonia washing down from manure is very bad for the foliage and it should never be placed directly on the plants, but it may serve a good purpose in conserving moisture between the rows Light chaff, straw or marsh hay may be used.

In the spring if the mulch has been applied between the rows heavily enough we rake off from directly over the plants to allow the leaves and stems to come up through the mulch, and leave it until after the picking is done If the mulch has been applied only on the plants and none between the rows, we cultivate not over one inch deep and then rake part off to the edge of the row to keep the berries clean.



Photograph of One Day's Mail.

ANSWERING QUESTIONS.

I cordially invite correspondence with all fruit growers and will take pleasure in giving them the benefit of my experience whenever it will be of service to them.

My Success depends on your success, and I am especially anxious that growers stocking their grounds with my Pedigree Plants shall do things at the right time and in the right way.

Among the opportunities I have for keeping in touch with the most progressive fruit growers of the day, I may be permitted to mention that I have a complete up-to-date horticultural library, am a subscriber and a contributor to all leading horticultural papers, have long been identified with the Michigan State Horticultural Society and am at present a member of its executive board, and President of the West Michigan Horticultural Society, which covers the most extensive fruit section in America. I am also an honorary member of five State Horticultural Societies, before which I have delivered lectures I am regularly employed by the Michigan State Board of Agriculture to deliver lectures, conduct institutes and lead discussions in fruit centers.

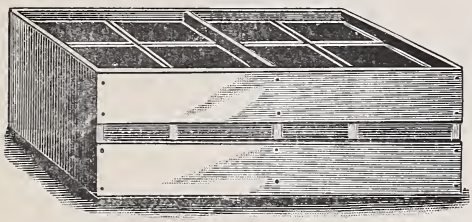
My large correspondence gives me practically an experiment station in every community in the country. They tell me of their methods of work, of the varieties they have tried and results obtained. With all these sources of reliable information I believe I can be of service to not only the commercial grower but to persons growing fruit for their own table. Write me at any time, giving particulars, and I shall be able to give you some valuable pointers.

NEW VARIETIES.

Our experimental grounds for testing new varieties are carefully conducted. Parties having new seedlings of great promise may send them here and have them carefully tested and secure a full report of their behavior.

They may rest assured that no plants will be propagated from them except to improve them by our system of selection and restriction for our own new trial beds.

None will be allowed to leave the ground without their consent. It requires at least twenty-five plants for a fair trial. We shall test many hundred seedlings originated through our thoroughbred plants and hope soon to offer some of great excellence, but they must be thoroughly tested under many conditions before they can be offered to the public.



BASKETS AND BERRY BOXES.

For many years past we have bought all our fruit packages of the Wells, Higman Co., of St. Joseph, Mich., and knowing them to be among the most extensive and reliable manufacturers in their line, I take pleasure in recommending them to any one who may be in need of any berry boxes or other shipping packages. Their goods are strictly first-class, and fruit growers who are not acquainted with this firm should correspond with them. They will mail their illustrated catalogue free on application.

NUMBER OF PLANTS REQUIRED TO SET ONE ACRE.

STRAWBERRIES.		GRAPES.	
18x30 inches	11,616	7x 7 feet	888
30x30 "	6,968	7x 8 "	777
18x34 "	10,250	7x 9 "	691
34x34 "	5,426	7x10 "	662
15x48 "	8,712	8x 8 "	680
20x36 "	8 712	8x 9 "	605
18x36 "	9,680	8x10 "	544
36x36 "	4,825	8x11 "	495
18x42 "	8,297	8x12 "	453
18x48 "	7,260		
24x48 "	5,445		

RASPBERRIES, BLACKBERRIES, ETC

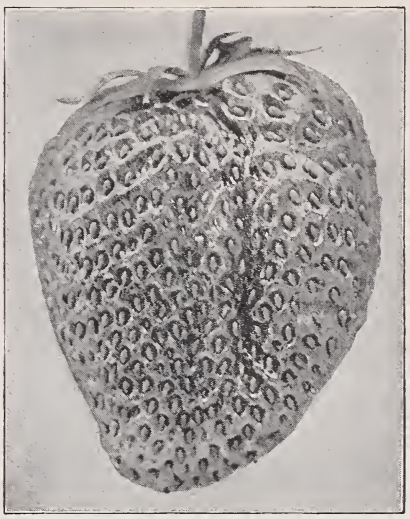
3x5 feet	2,904	3x7 feet	2,074
3x6 "	2,420	3x8 "	1,815

VARIETIES OF STRAWBERRIES.

The great diversity of soils and degrees of fertility as well as peculiar methods of cultivation adopted by different growers make it extremely difficult to recommend particular varieties.

Suppose you and a neighbor order twenty best varieties each and put them under the modes of cultivation recommended in this book. You would find one or more sorts which did better than all the others and this would be the variety you should make your leader; but when you came to compare notes with your neighbor you would not be likely to reach an agreement as to which were the best sorts.

You need several varieties, not only for testing to determine the ones most profitable, but the tastes of your customers will vary fully as much as your



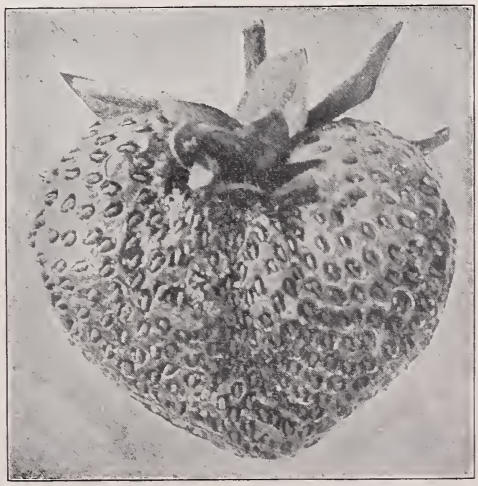
The Belle.

plants. You must be prepared to hold their patronage by offering them just what they want throughout the season.

In making up this list of varieties, I have, through my extensive correspondence and published reports of government experiment stations, taken special pains to discard what are called local varieties or those which succeed only in a few localities. Many of the discarded sorts were popular over wide areas, but we have better varieties to take their places.

We have a large number of sorts now on trial and we shall breed them up, and if they develop better qualities we will substitute them for some of the kinds we now offer and thus keep only the cream of all the leading varieties on our lists.

It shall be my business to visit the great fruit centers during the coming summer and study these new varieties on other grounds and in different localities to learn their good qualities and defects and thus be able to prune off and add to our list only sorts of the greatest value and at the same time reduce the number as occasion requires.



The Michigan.

The varieties here offered have been selected from over two hundred and fifty sorts now growing in my experimental grounds as being the very best. They have been widely tested and those introduced within the last few years have been carefully bred up and are the finest of their kind on the market. Never in my history of sixteen years of study in plant life have I had such perfect conditions in all particulars for plant breeding and testing varieties as at present.

A look at the prices will show you how, by the use of a very small amount of money, you can start a propagating bed this spring with these Pedigree Plants and propagate your own plants for setting a year hence; or, if you wish to plant largely this spring, you can't afford to throw away your money and labor on mongrel plants.

It will pay you big money to adopt the better methods and enjoy the fame of being a leader on the market and secure a competence for your family and old age.

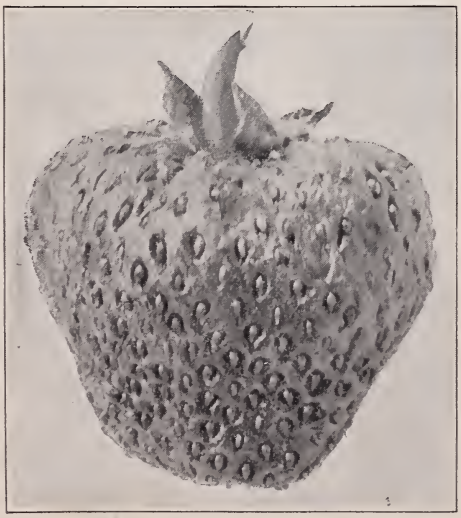
I point out to you nothing more than I have accomplished, and whereas I have spent many years of hard work and large sums of money in experimenting with these plants, you can, for a very small sum, stock your ground with the same as I have used to produce these large crops.

Send in your orders as early as possible so as to secure the varieties you desire as all orders will be filled in the rotation in which they are received and booked. Write me whenever my experience can serve you.

The illustrations are photograph half-tones made expressly for this book and serve to show the relative types and comparative sizes of the different varieties. The descriptions are as we find them in our field notes on our testing grounds.

In selecting varieties arrange to have every third row of those marked "B" (Bi-sexual), and the other two marked "P" or pistillate which are designated for the same season, early, medium, or late. Those marked B may be set alone although I believe they fruit better if about six rows of different kinds are set alternately in the same field so as to cross fertilize.

There is no strictly male flower. Such a variety would produce no fruit. The only reason we use the pistillates is they are much more productive and hardy.



Nick Ohmer.



Bi-sexual, (B) or Male Flower.

Pistillate, (P) or Female Flower.

VARIETIES

IN ALPHABETICAL ORDER.

See Price List on Page 29.

Aroma. (B) Season very late. Size much above medium, bright red flesh to center and a good shipper. One of the very best pollenizers for all very late sorts. It is a leader here and will be generally planted. It will not disappoint you.

Bubach. (P) Season medium late. One of the large show berries of such excellent quality that it always captures the market. Berries bright crimson, moderately firm but first-class for near market, succeeds best on rather heavy soil.

Bederwood. (B) Very early and exceedingly productive. Berries above medium in size and bright red. It is recognized as a standard sort for fertilizing all early pistillate varieties. It is quite subject to rust in wet seasons but if sprayed in the propagating bed the fungi will not be likely to develop in the fruiting field.

Brandywine. (B) Season medium to late. One of the grandest berries ever introduced. It is one of our favorites. If you do not have it by all means get it this season. It is one of the heaviest fruiters, a splendid shipper and a "catcher" on any market. Berries very large, deep red to center, of the type shown in the photograph. Stems short and stout and holds its great load of berries well up from the ground. One of the strongest pollenizers for pistillates of its season.

Wm. Belt. (B) Season quite early to very late. Berries very large, bright crimson and one of the most productive of the extra large sorts. This year it became more popular than ever and will be generally planted.

Belle. (B) Season late. This is one of the large, long berries, quite uniformly of type shown in the photograph. It should be picked with stem on and served by dipping point in sugar and eaten out of hand. Flavor is delicious and a good shipper. Plant it for the fancy trade.

Brunette. (B) Season medium early to quite late. Berries large, cone shape, dark red to center, very productive and of the very highest quality. It will rank No. 1 as a dessert berry and is in all respects very desirable, especially as a home berry where quality is appreciated.

Bismark. (B) Season medium late. A seedling of Bubach, which it resembles and is one of the most productive, large, perfect flowering berries ever introduced. Colors all over at once, very bright red and delicious. The berry in the glass under the Marshall represents it fairly. It is a good shipper.

Clyde. (B) Season medium. It has been many years since a berry has been introduced which created such a furore among growers as this. Its strong points may be enumerated as follows: enormously productive, berries large, cone shaped, as pretty as a top, bright crimson to the center, and seems to succeed on all soils. By all means give this berry a trial.

Cobden Queen. (P) Season quite early to late. Berries large, cone shaped and very beautiful, bright red and one of the best shippers, always selling at highest price. Its foliage is very rank and it makes itself at home on any soil. A grand market berry.

Cumberland. (B) Season medium early. Berries as true as a top, light crimson and very large. One of the most beautiful berries, and a great seller for near market. Mild, rich flavor. Many persons cannot eat a sour berry and will enjoy this.

Cyclone. (B) Season very early. One of the best pollenizers for early pistillates. A good shipper, of good size, high quality, bright red, long heart shape. It is one of the most popular varieties. Its foliage is very vigorous and never rusts. I know of no early berry which is more productive.



Digging the plants. Strawberries under mulch. No boys or careless men employed. Perfect Military discipline and perfect organization ensures perfect work.

We use this more largely as a pollenizer for early berries than any other. Succeeds on light or heavy land. Does best in hedge row.

Carrie. (P) Season medium early. A daughter of the Haverland and very closely resembles it. It is large, bright red color and very firm It is conceded to be one of the most productive berries ever put on the market. While it was only recently introduced yet evidence is abundant that it succeeds generally and will be largely planted.

Crescent. (P) Season early. This berry has made more money for growers than any other ever introduced. When properly grown, above medium size, bright red, good quality and a good shipper. Many growers have fruited it to impotency, and laid it aside because it would not attain size. I have maintained its vigor, so that it often grows as large as Sharpless. It makes runners freely, and must be grown in hedge or half matted row for "big berries and lots of them."

Commander. (B) Season early. It was imported from England four years ago. It seems more at home here than in its native land. Berries are very large, bright red to center and productive. Its quality is fine. A great show berry.

Drouth King. (P) Season early. It is of the Crescent type in habit of growth and roots very deeply. Succeeds on light sand and thrives well in spite of a protracted drouth. It is "King of the Dry Lands," a fine shipper, very productive. Berries when grown in hedge or narrow row are good size and fine quality.

Enhance. (B) Season late. One of the most productive bi-sexual berries grown. Berries very dark red, sometimes ribbed, very large and holds its size to last of season. Good pollenizer for late pistillates and succeeds everywhere. Has a flavor peculiar to itself and most people like it very much.

Epping. (P) Season medium early. Berries quite large, even size, bright color and very productive. One of the best for home or market. Foliage very vigorous and succeeds generally.

Enormous. (P) Season late. As its name indicates its berries are very large and bright red to center. Succeeds best on rather heavy moist soil where it is very productive. Made a great record last year and is rapidly coming to the front as a leading market berry.

Excelsior. (B) In all my experience in strawberry culture I have never tested a berry save the Sample which pleased me so much as this. It is rightly named for it surely excels any other early berry yet introduced and will be a leader as the extra early berry both north and south. It was fruited in the same plat with all the other extra early sorts and first picking was four full days ahead of Michel and only one day later than the Earliest. The berries were larger than any ripening at the same season, very uniform in size and the last picking was very nearly as large as the first. Its color is a deep blood red and one of the very best shippers. It will take the highest rank at the south for a berry to ship north. You run no risk in beginning to progagate it now.

The Earliest. (B) The earliest berry yet introduced. By selection and keeking it restricted we have partially changed its habit of making too many runners. It should be grown in hedge row when it stools up and is quite productive considering the fact that it ripens its berries nearly all at once which is a desirable thing in an extra early berry.

Fountain. (B) Season medium early. A berry of the highest quality, very handsome and of regular shape, and one of the most productive. It will command a fancy trade on account of superior flavor.

Greenville. (P) Season quite late. Now in general cultivation and a great favorite. It's a rival of Bubach, but succeeds better than that on sandy soil. Berries very large, bright crimson and very productive, a splendid berry for near market.

Gandy. (B) One of the most popular extra late sorts. The berries are large, cone shaped and as even as a top, and perhaps as largely planted as any late variety. It is very productive considering it ripens its berries nearly all at once and after most other varieties are running small, so the grower is still able to supply his customers with fine large berries.

Gladstone. (B) This berry was introduced last year by Mr. F. F. Merceson of Penn. A member of the staff of the Rural New Yorker visited his grounds at fruiting time and pronounced it the most remarkable berry he had seen for many years. Many other leading horticulturists pronounce it of great value. Our plants are propagated from those received from the introducer last spring. It is described as very large, bright red and of the best quality. Vigorous in foliage and every way superior.

Glenn Mary. (B) Season medium early to quite late. Berries bright red to center, large and fine. It is a great favorite with all who have fruited it and is being largely called for this spring. For a fancy berry in a fancy market it surely fills the bill.

Haverland. (P) Season medium early. This berry, when well propagated, holds its place as the most productive berry grown. When planted in hills or hedge the berries lay in windrows on each side of the row. While it is not classed as a firm berry, yet it has a tough skin and handles well for a near market. Its stems are not strong enough to hold the immense loads of berries up from the ground and must be mulched to protect them. Berries large and uniform, bright crimson.

Lovett. (B) Medium early to quite late. Berries are of the type shown in the photograph and very dark color. It stands high as a pollenizer for pistillates of its season and is very popular over a wide area of the country.

Louis Gauthier (B) Season quite early to late. It was imported from France three years ago. Its value lies in the fact that it produces a fairly good crop at the egular season and the new runners perfect their buds early and bloom in August and fruit during September and October. To secure this result as soon as the berries are through fruiting the runners should all be cut away narrowing the row up so it will have a chance to throw out new runners again in the spring and early summer. When the runners have set one or two plants the balance should be cut off so as to secure early development of buds. Plants must not be allowed to mat thickly. Keep them at least eight inches apart.

Maximus. (B) A new berry of the greatest promise. In habit of growth it makes few runners and stools up to mammoth proportions. The berries are conical in form, of the largest size, deep glossy scarlet, rank high as a table berry and should be included in the order for a propagating bed,



OUR HOME—The Product of a Strawberry Patch.

as the plants will be in great demand as soon as its merits are known.

Marshall. (B) Season late. King of big berries (see photograph). I have greatly improved vigor of foliage and increased size of fruit by my method of propagation and now believe it has no equal as an extremely large berry. Berries deep blood red to center, flavor very much like the wild berry. Foliage large and vigorous. While it will not perhaps yield as many quarts to the acre as some medium sized berries, yet it is the best extra large berry. It makes comparatively few runners and should be grown in hedge row or hills to get largest berries.

Michel's Early. (B) It has long been known as the extra early berry. When first introduced it created a great furore in the south as the extra early berry for shipping north and is now generally cultivated throughout the country. In many places through bad breeding it has become quite unproductive but where its vigor has been maintained and grown in hedge or very narrow rows it is one of the most profitable berries grown as the early berry catches the big prices.

Mexican Everbearing. (B) It may be doubted if any of the so called everbearing sorts are profitable for market except near large cities where very fancy prices can be had, usually a dollar per quart. It is, however, a great treat to have berries in August and September. The season governs largely the second crop. We urge the setting of a few for this purpose. This variety like the Oregon bears a regular crop and then develops its buds and fruits a second time throughout the fall months.

Manwell. (B) Season medium. Berries large, good shape, bright red, very productive and good. Its brilliant color, high quality and even size make it very desirable for those catering to a fancy family trade.

Michigan. (B) One of the latest berries on the list. There has been some complaint about foliage rusting in wet seasons but if plants are sprayed in the propagating beds there will be little or no danger of this and it will be found very profitable where an extremely late berry is desired. The berries rank among the largest and will serve the market when other berries are gone.

Magoon. (B) Season very late. It is this variety which creates such a furore in Chicago market every year, it being shipped in car loads from Oregon and Washington after other berries are all gone. It is very large, bright red to center, and of highest quality.

Margaret. (B) Medium early to late. The berries are large, even size, bright red to center, and of best quality. The reports throughout the country speak of it in highest terms. Here its behavior was fully up to expectations. A great berry for family trade.

New York. (B) Not fruited here as yet. It was introduced last year at the "moderate" sum of five dollars per dozen and if all reports are true it justified the price. It has made a good showing here in foliage and crowns now show large buds and a remarkable disposition to fruit. It is believed to be a seedling of Bubach and Jessie and a decided improvement on both. Berries rank with Marshall in size. Every one should propagate and test it. A dozen plants will give a good start.

Nick Ohmer. (B) It was impossible to supply the demand for this berry last year and the sales will be twice as large this year, It was introduced two years ago under high claims which are now conceded correct by every one who has tested it. It is especially valuable for fancy family trade and ships well for so large a berry. Season medium early to very late.

Oregon Everbearing. (B) What has been said of the Mexican applies to this as well as Tennyson. In many localities it proves valuable as a fall market berry in favorable seasons and sells at fabulous prices.

Ocean City. (B) Season medium early to very late. It made a host of friends this year by producing big bright red berries and lots of them. It is now generally planted and will be largely set the coming spring. It meets the requirements of those who want large berries.

Parker Earle. (B) Season late. Probably the most productive late bi-sexual berry grown. On light land it sets more fruit than it can mature. On rich, moist land under high culture, it succeeds well. Fruit large, good quality, dark glossy red. It makes very few runners. Succeeds well on low land.

Parker Earle—Improved—(B) A seedling of the Parker Earle, introduced by Mr. J. L. Arnot, who picked 11,968 quarts from two acres *at one picking* which was the third of the season. It is more vigorous in foliage than its parent and is undoubtedly an improvement on that sterling old variety.

Ridgeway. (B) Season medium early. Originated in Indiana where it is largely planted. Here it ranks high and I take pleasure in commending it as a vigorous plant with fruit of excellent quality and good size. It roots very deeply and will stand severe drouths and yet bring its berries to perfection.

Ruby. (B) Season medium. It is certainly a ruby of the first class. Plants are large and stocky. Berries large, cone shape, even in size, a good shipper and one that catches the eye on the market. It is really an "up-to-date" berry.

Star. (B) Season medium early. It is of recent introduction but is one of the bright stars of the strawberry firmament. The berries are large and true as a top; bright red and of excellent quality, and one of the most desirable of the new varieties.

Staples. (B) Season early, a seedling of Warfield and so closely resembles it that it can be used as a fertilizer with that variety and they can be picked together in the same crates. It is medium but very even in size, and deep blood red to center, and like Warfield, one of the best for canning or shipping.

Sample. (P) Season very late. I wish I could find words to impress on growers the value of this fine berry. This and the Excelsior quite captivated me and are entitled



PEDIGREE RASPBERRY FIELD.

to a place at the head of all recent introductions. It originated in Massachusetts and was a sweepstakes at all horticultural exhibitions and whoever keeps it under good cultivation, will hold the market against all comers. The plants are the largest on my grounds and it is enormously productive of fine large berries. The photograph of berry shown represents it correctly. Be sure and include this in your order for the propagating bed.

Sunnyside. (P) Season very late. Good size, even in form and looks very beautiful in the box. It is very vigorous in foliage as well as fruit and should be grown in hedge or very narrow matted row when it is one of the most profitable berries on the list.

Seaford. (P) Season quite late. Here is another berry over which we get very enthusiastic. "Windrows of great big beautiful berries on each side of the row," is what a visitor said and that was perhaps the best thing which could be said of its productiveness. The berries are great big bright fellows which catch the eye of the "critical buyer" on the market. Everybody speaks in the highest terms of it and you will make no mistake in planting it largely.

Tennessee Prolific. (B) A very early large beautiful productive berry. I am sorry the letter "T" in the alphabet brings this berry so far down in the list for it has made such a grand showing every year that it should be at the head of the list for early berries. It is planted largely in the south for shipping north and succeeds here equally well. Its foliage is vigorous, it roots deep and stands the drouth well. It makes runners freely but when grown in hedge row stools up in fine shape and should be classed as "enormously productive."

Tennyson. (B) Season early. Another everbearing sort. Produces many berries in September and October. In a wet season the crop is quite heavy, berries medium size, bright crimson and good.

Tubbs. (B) Season medium early to late. Now generally tested and found valuable. It is of the Crescent type, a free grower and very productive and continues through a long season, the berries holding up to good size until the close of the season. Berries bright crimson to center and very beautiful.

Wolverton. (B) Season medium to very late. If this berry had been introduced and distributed properly it would be in general cultivation. The foliage is so vigorous and healthy, the berries large bright red and quality so far above the average that every one who tests it plants more largely of it each year.

Warfield. (P) This is the great early market berry all over the country and more generally planted than any other. When in full vigor its productiveness is a marvel. While the plants in the propagating bed are never as large as some other sorts, yet when grown in hedge or very narrow matted row they stool up to good size and berries are very large, dark blood red and a good shipper. One of the very best for canning. By all means renew your stock with these thoroughbred plants.

Wilson's Albany. (B) Season early to late. It is probably the oldest berry now in cultivation and the new varieties are surely crowding it out. By careless propagation many have run out and cast it aside. Some object to it on account of its being sour, and others like it for this reason. One of the best varieties for canning

RASPBERRIES.

The raspberry fields of the country are generally in a deplorable condition. Not one grower in a hundred is harvesting one-half the berries he should and what he gets are very small and without flavor.

It has been the universal practice for growers to fruit plantations until run out and then propagate from them to start a "new" bed which was again fruited four or five years when it did not pay for labor and then renewed again in the same way.

Nurserymen have contributed to this disaster by contracting with these parties who grow on a large scale for evaporating, for plants to fill their orders and thus their exhausted stock has been sent broadcast over the country.

Pruning has often been neglected and these plantations soon become pollen exhausted and while the canes are large they produce very little fine fruit. The weakened canes easily succumb to fungi and other diseases and after four or five light crops are run out instead of fruiting heavily eight or ten years as they should do.

The true way is to breed up by propagating from ideal canes carefully selected and pruned, This is done with us every year so that this rapid selection weeds out all weak canes and leaves only those which are perfect and in full vigor.

The photograph shows one of our fields the second year after planting. The camera was placed too low to show the rows on right or left which are



THE BLACK DIAMOND RASPBERRY.

set seven feet apart, but exhibits the wonderful vigor of plants propagated under our system. This is the field which has produced the plants for this year's sales.

It is the big crop every year that pays and to get this you must have vigorous plants.

Growers should propagate their own plants as far as possible but bear in mind it is a great error to think you can grow fruitful plants from old run out scrub stock.

You can order a few of these magnificent Pedigree plants this spring and bury the tips and thus get a start of thoroughbred plants for a large plantation next year. If your ground is ready you cannot afford to wait for propagating as the *extra berries* on one crop would more than pay for plants and you would be one year ahead.

Set in rows seven feet apart and three feet apart in the row. Having fitted the ground as for strawberries plow a furrow about five inches deep and set plants flat in the bottom of the furrow with roots spread in all directions taking great care not to break off the buds and firm the soil as solid as possible with the feet all around the plant and fill in the furrow with loose earth to act as a mulch. Cultivation should be frequent until the last berry is picked when the old canes should be cut out and burned at once to destroy any fungi or insects which may have found a lodgment in them.

It is the greatest blunder to stop cultivation and allow berries to dry up and canes to stop growing in mid-summer, and then make a late growth in the fall which will be sure to winter kill.

One of the neatest ways of growing raspberries is to string a wire about four feet high with a stake every forty feet, and tie the canes to this. The expense is not great, and it prevents the wind from threshing the berries off and gives clear space for cultivating. In this case I would not pinch them back, but let them grow in their natural way, and at winter pruning cut off the upper third, and this will leave enough buds to produce all the berries the bush can mature without exhaustion. I have come to regard pinching off terminal buds, when the plant is about eighteen inches high, a mistake. Checking natural growth at this time interferes with assimilation of plant food, and if the season is very dry and hot several days often intervene before new buds start.

But if ground is rich canes get so long that cultivation is interfered with and pinching back might become a necessity if wire is not used. Great care should be exercised to remove only the terminal buds and not a leaf if it can be prevented. Never pinch in the laterals. One pinching of the main plant is enough. *Never* tie the canes to a stake in a bundle. They must have light and air and will not fruit without it.

VARIETIES OF RASPBERRIES.

Black Diamond. It was introduced last year and this season sustains its claim as a leader wherever fruited. It is not the largest berry ever grown but is large enough and all the same size, shiny black and looks exceedingly beautiful in the box. Its hardiness is proven. Not a report of an injury among those who fruited it last year

Cumberland. This is called the Business Blackcap. It is the new variety so lavishly praised by the Rural New Yorker. It is believed to be the largest blackcap ever introduced and surely the largest I have ever seen. It was introduced two years ago.

Eureka. Conceded to be one of the most productive hardy varieties ever introduced. It commences very early and continues until very late. The berries are shiny black and handsome.

Conrath. At present this holds the place for best mid-season blackcap. It is of ironclad hardiness, berries large, shiny black and always good sellers.

Palmer The earliest blackcap grown. It ripens its fruit several days before strawberries are gone and enables you to supply families without a break. It is very vigorous and productive.

Gualt. This is one of the everbearing sorts. It bears a crop at the regular season and the new canes develop their buds at the tips and produce a second crop in September and October. The canes must not be pinched back like other blackcaps as this will destroy the second crop

Kansas. A very large, hardy and vigorous berry. It has been selected at many government experiment stations as the best medium early blackcap and is commended for general planting.

Older. Its good qualities are deep rootage which succeeds on dry soils and is especially valuable on the arid lands of the west. It is of iron clad hardiness. The season is medium early to late.

Munger. It resembles the Gregg but throughout the past cold winter stood the extreme cold very much better. It is probably the largest and best late blackcap yet introduced.

Gregg. This is the old standard late berry, more generally planted than any other late blackcap. The berries come late and are very large and fine and a good shipper.

Columbian. A large purple berry of the greatest value, especially for canning. It will probably produce more quarts to the acre than any other berry.

RED VARIETIES.

The cultivation is the same as blackcaps except they should never be pinched back.

The buds are not so strong on the laterals, and do not produce as good berries as those on the main canes. By cutting off the upper third of the cane at the winter pruning all the buds will be left that are desirable. The plantation will last longer and fruit better. Treat all suckers as weeds. It soon spoils a fruiting bed to cut the roots in digging up plants.

The Miller. This is now the most generally planted of the early red raspberries. It proves hardy and productive. The berries are very firm, large, bright red and good.

The Early King. Very vigorous in cane and will surely take the first place as an extra early large red berry. Its hardiness and earliness have been fully tested during the past winter when not a bud was injured.

Turner. This has long been known as one of the most hardy, productive and reliable sorts of red raspberries. It was never known to winter kill in Michigan when properly cultivated.

Colorado Iron Clad. A variety of great value especially in point of hardiness. It was found growing wild in many parts of Colorado, always withstanding the severest winters. Parties in the northwest who have been deprived of this delicious fruit should try this berry. The berries, while not a good shipper, are most deliciously sweet and for family use or near market are very fine.

Cuthbert. This has long been the standard late berry. "The queen of the market" in name and in fact. Fruit large, firm, bright crimson and the best shipper.

Loudon. A late berry that has come to stay. It stood the past terrible winter here and throughout the country, and has given great satisfaction. Probably filling the claims of the originator better than any berry introduced in recent years. Berries are large and really fine.

A REVOLUTION IN BLACKBERRY GROWING.

Nothing sells better, nothing pays better, nothing is grown more easily. The new method of starting the plantation produces double that of the old way. Its fruit is more luscious and a plantation will fruit heavily under good culture and pruning from fifteen to twenty years, giving annually large crops.

The demand for this fruit is practically unlimited. The trouble is blackberries as offered are sour, seedy and lack flavor.

Scarcely a town in the country is supplied at all with large luscious blackberries.

Under the new system of establishing the patch every cane is loaded with large luscious berries of the most delicious flavor and gives a big crop every year because the ground is filled with a dense mass of roots making root pasturage of every square inch of soil for several feet around the plant, furnishing an abundance of food to sustain it in bringing its great load of fruit to full maturity without exhausting the plant.

How it is done.—Pursue the same method explained in breeding up strawberries. Find all the ideal canes bearing the finest fruit, and not over two years old. Early in the fall dig them up and cut roots in pieces about three inches long and pack in boxes of clean, coarse, sharp sand and place in a cold cellar regulated with ice so the thermometer will stand at 35 degrees. An ordinary cellar will not do, for if allowed to get too warm the cuttings will commence to grow and all be spoiled. If allowed to freeze they will not callus and thus fail to emit sufficient roots.

What is a callus?—It is a law of nature that when a root is cut or injured the plant will repair the damage by sending out new roots, but no new roots will start until a callus is formed. Certain wood cells and a gristle-like substance must form, and out of this callus the roots start. The process requires time and goes on at a low temperature and the longer the root is kept in this dormant condition the more calluses there will be.

Roots prepared in October form calluses in great numbers before planting time the following May, when the cuttings are placed in nursery rows in rich, moist, sandy soil about three inches apart and one and a half deep. It is quite difficult to make them grow properly without irrigation. *If the roots get dry* they will fail. If buried too deep they damp off and die. Low, springy or cold ground will not do They must have frequent cultivation and not a weed allowed to grow among them. As soon as dormant in the fall, the plants are carefully taken up and roots trimmed to the proper length and again packed in coarse sharp sand so it is solid around every root and kept as in the first winter, when calluses form all along the sides and ends of roots so that when planted out where they are to fruit in the spring myriads of roots will start at one time and at the end of the season the ground will be full of fine feeding roots as above described. In keeping them in the callusing cellar it should be supplied with ice, for if perchance the cellar gets too warm the plants will grow and be lost. We are able to send them to customers while dormant early in the spring.

The common way is, as in the case of raspberries, to let a patch fruit as long as it will and then mow off the tops and let suckers come up from between the rows and the next season dig them up to start a new patch. Of course the weakness and exhaustion of the old patch is carried into the new. The roots on the plant are few and commence growing always from the end, and I have seen them extend several rods away, while near the canes the ground would not be occupied at all. The sap having to come through these long roots to the leaves for assimilation they are continuously sending up suckers which become a nuisance.

Digging sucker Plants destroys a plantation very quickly and causes the sucker nuisance to increase, and cutting the roots thus depriving the plant of its feeders when soon to be loaded with fruit, exhausts and renders it unfruitful. Treat all suckers as weeds and cut them off a little under the surface.

The location should not be on low or marshy ground. High ground is better.

VARIETIES OF BLACKBERRIES.

Price List on Page 30.

Our stock of blackberry plants is large but the demand for them for propagating purposes is so great that we have decided to quote them at only dozen and hundred rates so there would be no disappointment to customers in filling their orders.

They are large root-cutting plants, re-callused, and under good treatment will produce double the

fruit every year of those grown from common plants. The callusing process is a great triumph in blackberry culture.

The Western Triumph. On my farm at Ionia it has been the leading berry for twenty years, and has never failed to yield a large and profitable crop. I have never given it winter protection, and have never known of a failure if properly cultivated. It is of good size, free from core and has a delicious flavor. Season early.

Taylor Prolific. Follows the Western Triumph in season. It is regarded as very hardy. In quality it is probably the richest berry grown, having that sweet aromatic flavor peculiar to wild berries. It prolongs the season to the early grapes.

Snyder—that old iron clad, which succeeds anywhere a blackberry can be grown. If properly pruned and cultivated, the berries are good size and fine. Like all other blackberries under neglect and not pruned, it overbears and berries are small.

Ancient Briton. The leading berry in the northwest, where it grows to great perfection. Its canes and flexible roots render it easy to lay down for winter protection. Its berries are fine; season medium early.

Eldorado. Has now been thoroughly tested and is meeting with much favor. The demand for plants will exceed the supply. Canes are strong and entirely hardy; berries good size, sweet and rich.

Early Harvest. The earliest blackberry grown, ripening with first raspberries. The berries are not large but so very even in size and beautiful they sell fast. It comes in long in advance of other varieties. It is not classed as hardy but its long slender growth makes it easily laid down for winter protection.

The Messereau. A gentleman in New York purchased a quantity of Snyder Blackberries. When they came into bearing one of these plants quickly attracted attention by its vigorous growth and berries which were much larger and sweeter than any other. The attention of Prof. Bailey, of Cornell University, was called to it who at once pronounced it to be a new and distinct variety and named it Messereau in honor of the man who first recognized it. Its hardiness was demonstrated during the extreme winter of 1898-9 when not a bud was injured and it bore twice as much as the Snyder, and of a much higher quality. It is certain the demand for plants will be very great for a long time to come.

Erie. A large sweet berry, hardy and vigorous and one of the leading and popular varieties. It is generally cultivated and a success in all particulars. Berries are large, roundish, glossy black and of excellent quality.

Kittatinny. An extra large vigorous and productive variety. The canes are extra large and berries long, black and sweet.

Ohmer. The latest berry on the list, and one of the best. Berries are extra large for its season and should be planted largely. Extreme late berries always sell at a high price.

Agawam. Ranks highest in quality. Prof. Bailey pronounces it as the best and it is probably the most popular berry in New York where it originated. It has been proven to be entirely hardy and especially valuable for family use where quality is the first consideration.

DEWBERRIES.

When properly propagated and grown the dewberry is very profitable and a ready seller. It comes on the market two or three weeks ahead of high bush blackberries and always commands a high price. If left unpruned it soon fruits itself into impotency and then produces only a few small deformed berries.

When propagated from plants in full vigor and pruned as directed the berries are very large, shiny black and deliciously sweet. Our berries this year averaged an inch and a half in length and an inch in diameter. Everybody wanted them and they sold at a high price.

Prepare ground as for strawberries. Set plants in rows five feet apart and three and a half feet apart in the row. Drive a good stout stake every twenty feet and put one wire twenty inches from the ground and the other about twelve inches above it and prune to five or six canes shortened to about four feet, and tie to the wires, spreading them out fan shape and then you can cultivate the entire surface.

If too many new "second" canes appear cut them off so as to throw all the strength of the plant into forming large canes for next year's fruiting.

The work required is not so much as you may suppose. It can be done very rapidly. Grown in this way you will be astonished at the size of berries and the amount and quality of fruit you will gather. In the north the canes can be easily laid on the ground and given a little winter protection by turning a light furrow over them. For this latitude it is sufficient to lay them on the ground late in the fall.

We can furnish the largest and finest plants this spring I have ever seen. All are grown from two year old Pedigree Plants in full vigor.

Lucretia. This is the leading and most popular dewberry yet discovered. It succeeds everywhere and is not particular about kind of soil. Berries are very large, bright glossy black and of fine flavor. It should not be picked oftener than twice a week when it is very sweet and rich. It ripens with the last strawberries.

Austin's Improved. This is still a comparatively new berry, but of much promise. The berries are extra large and fine. It has the same season as the Lucretia.

HARDINESS OF RASPBERRIES AND BLACKBERRIES.

The hardiness of all berry bushes can be greatly increased by proper cultivation. The term "winter killing" is a misnomer. It should be called *summer killing* for while the killing is actually done in the winter it is made possible by the lack of proper cultivation during the summer.

The ground is allowed to dry out in mid-summer and the plants stop growing and proceed to ripen their wood and buds and prepare for winter. Later on fall rains come and a late growth sets in which does not ripen before the leaves are killed by frost and then the whole process of growth of wood and buds is stopped and the plants reach heavy freezing weather full of sap and are injured or destroyed the first cold snap.

How this can be prevented.—Start the cultivator early in the spring while the subsoil is full of water to prevent evaporation. Cultivate every week and always after every rain. When berry picking commences the ground is tramped down hard making capillary action perfect so water draws up through the firm surface soil very fast, causing berries to dry up as well as stopping the growth of the plant. This is the reason why it is important to cultivate the same day after every picking.

Cut out the old wood as soon as the picking is over and then about the first of August sow as much as four bushels of oats to the acre and cultivate in. The amount of oats recommended is not excessive because they make so rapid growth they will not stool up and we want a heavy mat to make a mulch which will shade the ground and send its roots down appropriating the plant food and moisture so the bushes do not get it and this checks growth and causes them to ripen the wood slowly and when winter comes all the canes will be firm and solid and will pass the winter like a scrub oak.

The oats will make a large growth and remain green until hard freezing comes when they will kill down but continue to shade the ground and prevent soil washing by winter rains, and in the spring be sufficiently rotted to cultivate in and add largely to the humus of the surface soil which prevents the particles from settling together and forming a crust, thus aiding very greatly in getting the desired early spring growth. The more humus there is in the soil the easier it is to conserve moisture.

Nothing pays so well in raspberry and blackberry growing as this process of cultivation. It keeps the berries large, juicy and delicious until the last one is picked. All the berries will then grow to their full size and a bountiful harvest is secured every year. All the growth you get before the first of August is a benefit; all you get after that is lost, and all the wood made after the first of September

is killed by slight freezing. Always let the cultivator go at a uniform depth of three inches so the roots can come near the surface to get air and still not be broken and mutilated by the cultivator.

CURRANTS.

Price List on Page 30.

Currants are so easily grown, fruit so heavily, are so hardy and easily cared for that it is amazing that every table in the land is not abundantly supplied with this cooling and delicious fruit. The ground should be made very rich and the weeds kept out by frequent shallow cultivation. Heavy mulching will answer in small gardens but for the field give thorough tillage.

Prepare the ground as for raspberries and blackberries and set plants in rows six feet apart and four feet apart in the row, making check rows so you can cultivate both ways. Keep well pruned by cutting out old wood and shortening in new wood. Do not allow them to overbear and you will secure immense crops every year.

The Currant Worm appears soon after the leaves start, near the ground in a cluster. If a weak solution of Paris green is sprinkled on the lower center foliage that will be the end of them. If they appear later, dust a little white hellebore while the dew is on, or put a teaspoonful in a pailful of water and sprinkle with a whisk broom.

The London Market is by all odds the most profitable currant to grow. It sells for half more and produces almost double the fruit of any other variety. More will be set in Michigan this year than any other sort. The fruit is large, fire red, and clusters fine.

Victoria has long been a favorite. Where the currant borer is known to be numerous this variety should be planted, the pith being so small that the worm cannot work in it to do serious injury. Fruit is good size, bright red and very productive.

Fay. On very rich, heavy land and high culture it is fairly productive, and has very large berries. It does not sell better nor produce half as much as the London Market.

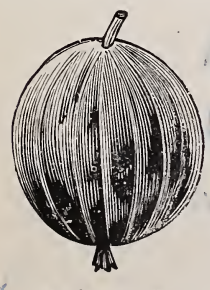
Cherry. The old standard currant, good size, good bunch and very productive.

Pomona. A nice large, early red currant which is making many friends by reason of vigor of bush and superior quality of fruit, and is sweeter than other varieties.

THE GOOSEBERRY

Is now attracting much attention and proving one of the most profitable berries grown. The demand is increasing very much faster than the supply. Their general cultivation is similar to that of currants, and insects are disposed of in the same way.

For picking use a thick pair of buckskin gloves and strip the fruit off by handfuls and run through a fanning mill, or pour them on a blanket so that the wind will blow the leaves out. It's quick work. Keep the bush pruned rather closely, and top of bush open. They do better with heavy mulch.



Smith's Improved is a large, pale yellow berry of great beauty and surprisingly productive. It is making many friends everywhere.

The Downing is the most popular berry for market, large, even, fine grained, and makes a fine large bush.

Houghton is enormously productive and very free from mildew. Berries are not quite so large as Downing, but in some markets sell better.

Red Jacket. A comparatively new but now well tested variety of much merit. Resists mildew, large berries, very hardy and good.



PRUNING

The object of pruning is to make plants more productive and to extend their time of usefulness. If left unrestricted they throw their whole energies into this one act of multiplying their species by seed bearing. While they should be encouraged to bear a large crop of fruit they must not be allowed to bear an excessive crop and so exhaust themselves that they cannot produce another large crop for several years, hence we must determine their ability and relieve them of surplus fruit buds maintaining an equal balance between root and branch, preserve symmetry and beauty and furnish light and free air to all parts of the branches. With these suggestions the engraving will show how the work should be done.

THE VINEYARD.

Of all the fruit that grows there is none more beautiful and tempting than the grape, with its great rich clusters hidden away in the cool shade of its dense foliage. They are so easy to grow and afford so much pleasure for the labor expended, that a business man, mechanic or farmer who should deny his family or the hired help an abundance of this luscious fruit comes close to the border of cruelty. A few vines, a very little care, and the enjoyment is yours.

VARIETIES OF GRAPES.

There are too many varieties that are not especially valuable. We describe a few of those we regard as the cream of the list

BLACK GRAPES.

See price list on page 31.

Concord. It may be said that the introduction of the **Concord** was the beginning of successful grape culture in this country. It succeeds wherever a grape can be grown. It is yet the leading market variety and too well known to need description, but in many localities is giving way to the Worden.

Worden, I believe, is the richest and sweetest black grape grown in this country. Perfectly hardy, fully as productive as Concord, larger berry and cluster, and a week or ten days earlier. They are gone before Concord arrives.

Moore's Early is one of the best extra early grapes, ripening fully two weeks ahead of Concord. The berry is very large, entirely hardy, and on rich soil very productive. It is generally all gone before Worden comes on. Must have very heavy, strong, rich soil.

Campbell's Early. This is the latest furore in grapes and is now attracting more attention than any other grape. Berries very large, often an inch in diameter, very sweet and rich and one of the earliest good grapes. It has received many medals of award including those from American Pomological Society and American Institute, New York, and various State Horticultural Societies.



The Brilliant Grape.

The Early Ohio. The earliest good black grape known. It ripens fully ten days or two weeks before Moore's Early. Bunch large, compact and shouldered, berry medium size and covered with a rich bloom. Wherever tested has proven entirely hardy. Berries adhere firmly to the stem.

Wilder (Rogers' No. 4). Bunch and berry large, early, hardy, healthy and productive; good keeper, profitable and of excellent quality.

Barry (Rogers' No. 43). A very attractive grape. Bunch medium size, berry large, sweet and good, vine a strong grower, healthy and hardy. Season with Concord.

RED GRAPES.

Delaware. Considered by many as the standard of excellence in grapes, requires strong soil and good culture.

Agawam. One of the longest keepers and best family grapes grown. Can be kept until March.

Jefferson. One of the best red grapes, a good grower, hardy and productive. R pens with the Concord.

Lindley (Rogers' No. 9). Desirable for extensive planting. Strong grower, healthy and hardy. Should be in every garden.

Salem (Rogers' No. 22). Bunch and berry very large. Healthy, hardy and vigorous. A good keeper and fine table berry.

Brighton. Dark red; one of the most desirable of the new grapes; clusters very uniform and beautiful; quality fine.

Wyoming Red. One of the most hardy and beautiful very early red grapes grown. Skin rather tough, keeps well, fine flavor, vine very vigorous and hardy.

Brilliant. A beautiful red grape, originating in Texas, but has been tested in every state in the Union and proven a success. In quality it much resembles the Delaware but both bunch and berry are very much larger.

WHITE GRAPES.

Moore's Diamond. Bunch and berry very large; strong grower, hardy wherever grown, and becoming more popular every year. It has come to stay and will be largely planted and sought for in the market.

Niagara. Quality about like Concord; bunch and berry very large; vigorous, healthy and hardy.

Esther. A white grape of the highest quality, medium early, larger than Niagara or Procklinton. Very showy for exhibition.

Duchess. Pale greenish yellow, and of the finest quality. Season a little later than Concord.

In selecting varieties of grapes, as well as other fruits, have them begin with the earliest and extend to the latest, so the table or market may be supplied every day throughout the entire season. Always have an abundance of some one variety.

ASPARAGUS.



This is the greatest money making crop, labor considered, on the farm and will give a family more pleasure than anything else that can be placed in the garden. It sells at sight and people are just learning how delicious it is. Many prefer it to green peas. We have had a half acre from which we generally cut about two hundred dollars worth of "grass" each spring. We cut it every warm day from the last of April 'till the middle or last of June.

It grows from "crowns" and as soon as one shoot is cut another starts in its place so the growth is continuous. I have seen shoots as large as your thumb grow an inch per hour and we have been obliged to cut twice in a single day.

No family can eat as much as will grow from fifty or a hundred plants and the bed will last more than a hundred years without renewal.

The plants are so cheap and trouble so little, every farmer should have a bed started at once. When the good wife is so bothered in April and May for "sass" she can step into the garden in a moment and gather a supply that in addition to a few other "fixings" will make a royal meal that will be greatly appreciated.

Select a site if possible sloping to the south and make it as rich as possible. Set rows three and a half feet apart and plants two feet apart in the row. Plow a furrow and set plants not less than six inches deep. Make no cuttings the first year. As quick as ground is dry enough in the spring cultivate over the entire surface, taking care not to go deep enough to disturb the roots.

For family garden set a row along the fence or in a corner with plants about two feet apart.

Conover Colossal. More generally planted than any other. The old standard sort.

Barr's Mammoth. Very large on good soil.

Palmetto. Starts very early and largely used at the south for shipping north.

In conclusion permit me to say this is an age when no one man can know all about everything No man can be an up to date lawyer, doctor, farmer and teacher, but each one must choose his specialty and surround himself with facilities to do the most perfect work. This I have done.

With seventeen years experience and the most perfect facilities for doing the work of selecting and breeding mother plants from which you can restock your grounds and expend your labor on plants whose breeding have given them the natural habit of fruit producing, I feel that I can be of real advantage to you in my special work in plant breeding while you reap still greater rewards in enjoying the distinction of being the up to date berry grower in your community. Then the labor is lightened and converted into unalloyed pleasure.

The thousands of letters on file in my desk from young men who have turned from a life of dependence as a wage earner to one of independence and competence is one of the most delightful rewards of all my years of study and investigation No business is so fascinating and none when conducted along the lines I have pointed out will give you greater returns, and now wishing you success am most truly yours,

R M. KELLOGG.

PRICE LIST OF PLANTS.

Strawberries

These prices are for plants of one variety only. Not less than 12 of any variety of Strawberries will be sold, as less than that number is not sufficient for a fair test. No order accepted for less than $1.00.

VARIETIES.	FOR 12	FOR 25	FOR 50	FOR 100	FOR 200	FOR 300	FOR 400	FOR 500	FOR 1000
Aroma (B)	$0 15	$0 20	$0 25	$0 50	$0 75	$1 00	$1 25	$1 50	$3 00
Bederwood (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Wm. Belt (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Bubach (P)	20	25	30	60	95	1 25	1 50	1 75	3 50
Brunette (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Bismark (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Brandywine (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Belle (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Carrie (P)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Commander (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Clyde (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Crescent (P)	15	20	25	50	75	1 00	1 25	1 50	3 00
Cumberland (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Cobden Queen (P)	20	25	30	60	95	1 25	1 50	1 75	3 50
Cyclone (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Drouth King (P)	20	25	30	60	95	1 25	1 50	1 75	3 50
Enhance (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Epping (P)	15	20	25	50	75	1 00	1 25	1 50	3 00
Excelsior	25	30	35	70	1 20	1 65	2 10	2 50	5 00
Earliest	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Enormous (P)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Fountain (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Gandy (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Glenn Mary (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Greenville (P)	15	20	25	50	75	1 00	1 25	1 50	3 00
Gladstone	50	80	1 50	3 00					
Haverland (P)	15	20	25	50	75	1 00	1 25	1 50	3 00
Louis Gauthier (B)	25	30	35	70	1 20	1 65	2 10	2 50	5 00
Lovett (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Margaret (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Mexican E (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Michel's Early (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Manwell (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Michigan (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Magoon (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Marshall (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Maximus	25	35	50	1 00					
New York	1 00	1 75	3 00	5 00					
Nick Ohmer (B)	25	30	35	70	1 20	1 65	2 10	2 50	5 00
Ocean City (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Oregon Ever. (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Parker Earle (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Parker Earle Improved	25	35	50	1 00					
Ridgeway (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Ruby (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Staples (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Sunnyside (P)	15	20	25	50	75	1 00	1 25	1 50	3 00
Sample (P)	25	30	35	70	1 20	1 65	2 10	2 50	5 00
Star (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Seaford (P)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Tennessee Prolific (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Tennyson (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Tubbs (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Warfield (P)	15	20	25	50	75	1 00	1 25	1 50	3 00
Wolverton (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Wilson's Albany (B)	15	20	25	50	5	1 00	1 25	1 50	3 00

Black Raspberries.

VARIETIES.	FOR 6	FOR 12	FOR 25	FOR 50	FOR 100
Black Diamond	$0 50	$0 75	$1 00	$1 25	$2 50
Eureka	25	35	50	75	1 50
Conrath	25	35	50	75	1 50
Columbian	25	35	50	75	1 50
Cumberland	40	75	1 50	3 00	5 00
Gault	25	35	50	75	1 50
Gregg	25	35	50	75	1 50
Kansas	25	35	50	75	1 50
Older	25	35	50	75	1 50
Palmer	25	35	50	75	1 50
Munger	30	40	60	85	1 60

Red Raspberries.

VARIETIES.	FOR 6	FOR 12	FOR 25	FOR 50	FOR 100
Colorado Iron Clad	$0 30	$0 50	$0 75	$1 25	$2 00
Cuthbert	25	35	50	75	1 50
Early King	60	1 00	1 75	3 50	6 00
Loudon	30	40	60	85	1 60
Miller	25	35	50	75	1 50
Turner	25	35	50	75	1 50

Blackberries.

VARIETIES.	FOR 6	FOR 12	FOR 25	FOR 50	FOR 100
Western Triumph	$0 30	$0 50	$0 75	$1 00	$2 00
Taylor Prolific	30	50	75	1 00	2 00
Snyder	30	50	75	1 00	2 00
Ancient Briton	30	50	75	1 00	2 00
Early Harvest	30	50	75	1 00	2 00
Eldorado	35	60	90	1 25	2 50
Erie	30	50	75	1 00	2 00
Kittatinny	30	50	75	1 00	2 00
Ohmer	35	60	1 00	1 50	2 50
Agawam	35	60	1 00	1 50	2 50
Messereau	75	1 50	2 50	5 00	10 00

Dewberries.

VARIETIES.	FOR 6	FOR 12	FOR 25	FOR 50	FOR 100	FOR 200	FOR 300	FOR 400	FOR 500	FOR 1000
Lucretia	$0 30	$0 50	$0 75	$1 00	$2 00	$3 00	$4 00	$5 00	$6 00	$12 00
Austin's Improved	35	60	90	1 25	2 50					

Currants.

VARIETIES.	FOR 6	FOR 12	FOR 25	FOR 50	FOR 100
London Market	$0 40	$0 75	$1 50	$3 00	$5 00
Fay	50	1 00	2 00	3 50	6 00
Victoria	40	75	1 25	2 50	4 00
Cherry	40	75	1 25	2 50	4 00
Pomona	60	1 20	2 25	4 50	8 00

Gooseberries.

VARIETIES.	EACH	FOR 6	FOR 12	FOR 25	FOR 50	FOR 100
Smith's Improved, 1 yr	$0 15	$0 75	$1 25	$2 00	$4 00	$7 00
Smith's Improved, 2 yrs	20	1 00	1 50	2 50	5 00	9 00
Downing, 1 yr	15	75	1 25	1 75	3 50	6 00
Downing, 2 yrs	20	90	1 50	2 25	4 50	8 00
Houghton, 1 yr	10	40	75	1 50	3 00	5 00
Houghton, 2 yrs	15	75	1 25	1 75	3 50	6 00
Red Jacket, 1 yr	25	1 25	2 00	3 50	5 00	9 00
Red Jacket, 2 yrs	35	1 50	2 50	4 00	6 50	12 00

Black Grapes.

VARIETIES.	EACH	FOR 6	FOR 12	FOR 25	FOR 50	FOR 100
Barry, 1 yr	$0 25	$1 25	$2 00	$3 50	$6 00	$10 00
Barry, 2 yrs	30	1 50	2 50	4 00	7 00	12 00
Concord, 1 yr	10	40	75	1 25	2 00	3 50
Concord, 2 yrs	15	60	1 00	1 75	3 00	5 00
Worden, 1 yr	10	40	75	1 25	2 00	3 50
Worden, 2 yrs	15	60	1 00	1 75	3 00	5 00
Moore's Early, 1 yr	10	40	75	1 25	2 00	3 50
Moore's Early, 2 yrs	15	60	1 00	1 75	3 00	5 00
Wilder, 1 yr	15	60	1 00	1 75	3 50	6 00
Wilder, 2 yrs	25	90	1 50	2 50	4 50	8 00
Early Ohio, 1 yr	25	1 25	2 00	3 50	6 00	10 00
Early Ohio, 2 yrs	35	1 50	2 50	4 50	8 00	15 00
Campbell's Early, 1 yr	75	4 00	7 50	14 00	24 00	40 00
Campbell's Early, 2 yrs	1 00	5 00	9 50	18 00	34 00	60 00

Asparagus.

VARIETIES.	FOR 12	FOR 25	FOR 50	FOR 100
Conover Colossal	$0 40	$0 60	$0 85	$1 50
Barr's Mammoth	40	60	85	1 50
Palmetto	40	60	85	1 50

Red Grapes.

VARIETIES.	EACH	FOR 6	FOR 12	FOR 25	FOR 50	FOR 100
Delaware, 1 yr	$0 15	$0 60	$1 00	$1 75	$3 00	$ 5 00
Delaware, 2 yrs	20	75	1 25	2 00	3 50	6 00
Agawam, 1 yr	15	60	1 00	1 75	3 00	5 00
Agawam, 2 yrs	20	75	1 25	2 00	3 50	6 00
Lindley, 1 yr	15	60	1 00	1 75	3 00	5 00
Lindley, 2 yrs	20	75	1 25	2 00	3 50	6 00
Brighton, 1 yr	15	60	1 00	1 75	3 50	5 00
Brighton, 2 yrs	20	75	1 25	2 00	3 50	6 00
Jefferson, 1 yr	20	75	1 25	2 00	3 50	6 00
Jefferson, 2 yrs	25	90	1 50	2 50	4 50	8 00
Wyoming, 1 yr	20	75	1 25	2 00	3 50	6 00
Wyoming, 2 yrs	25	90	1 50	2 50	4 50	8 00
Salem, 1 yr	20	75	1 25	2 00	3 50	6 00
Salem, 2 yrs	25	90	1 50	2 50	4 50	8 00
Brilliant, 1 yr	40	2 00	3 50	6 00	11 00	20 00
Brilliant, 2 yrs	50	2 50	4 50	8 50	16 00	30 00

White Grapes.

VARIETIES.	EACH	FOR 6	FOR 12	FOR 25	FOR 50	FOR 100
Esther, 1 yr	$0 50	$2 00	$3 50	$6 00	$11 00	$20 00
Esther, 2 yrs	60	2 75	4 50	8 00	15 00	28 00
Moore's Diamond, 1 yr	25	1 00	1 75	3 00	4 50	8 00
Moore's Diamond, 2 yrs	30	1 25	2 00	3 25	5 50	10 00
Niagara, 1 yr	15	60	1 00	1 75	3 00	5 00
Niagara, 2 yrs	20	75	1 25	2 00	3 50	6 00
Duchess, 1 yr	25	1 00	1 75	3 00	4 50	8 00
Duchess, 2 yrs	30	1 50	2 50	4 00	7 00	12 00

In making out your order please observe that there is but one price and that for the quantity stated. All customers are treated alike. There are no discounts. We are trying to see how good plants we can grow and how cheap we can sell them. They are the best plants I have ever seen and prices stated are the lowest at which they can be furnished. All orders sent by mail require postage added to cost of plants. See "Notice to Patrons."

PLEASE CUT THIS SHEET OUT TO SEND YOUR ORDER ON.

Date..... 190.....

R. M. KELLOGG, Three Rivers, Mich.:

For the amount enclosed ($.....) please fill the following order.
Read Notice to Patrons on the inside of back cover before filling out your order.

Name.....
(Write name very plainly. Print it so there can be no mistake.)

Postoffice.....

County..... *State*.....

Ship by.....
(Say whether to be sent by freight, express, or mail.)

Name of Freight or Express } *Station is*.....

County..... *State*.....

QUANTITY.	NAME OF PLANTS ORDERED.	PRICE.	
	AMOUNT FOR POSTAGE IF TO BE SENT BY MAIL.		

THE FOLLOWING LETTERS

Are But Samples of Many Hundreds Received from Correspondents.

J. B. Manton, Herkimer Co, N. Y.:—I enclose my third annual order for plants. I wish you could have seen and compared my berries this year with what I had three years ago—the old style. Then I had small berries and nubbins. Now my berries are large fat fellows and my trade is very satisfactory. The supply though much larger is always below the demand. I shall visit you the coming summer.

P. D. Munson, Wayne Co., Mich.:—This is the third year I have set your plants and I am satisfied beyond question that your claims that continuously selecting the best and rejecting the weaklings are correct. I have now made a fair test and I know whereof I speak. My visit to your grounds further convinced me that fruit growers must adopt the new method of propagating plants in special beds expressly for plants.

J. O. Wright, Atchison Co., Kan.:—I was very skeptical about the value of pedigree in plants and your theories of exhaustion, but your plants were cheap so I thought I would risk a little. The next year I was so far convinced I ordered a lot of them and propagated in the same way. I am now thoroughly convinced and shall always look to you for plants for my propagating bed and for general planting when I need them. There is no profit in making land rich and setting plants on it that will go all to runners.

Chas. E. Curtiss, Saline Co., Kan.:—If seeing is believing I am ready to accept your theories of pedigree in plants. My trial under the same conditions of your thoroughbred plants and those of my own convince me of their superiority. My own stock made runners profusely and stooled up but little while your plants made much less runners and immense crowns and there was no comparison in the berries. No one need tell me there is no difference in plants or that plants do not change their habits. I know they do, and know your method of selection and restriction is right. I want several varieties next spring for testing and propagating beds.

W. R. Eastman, Marion Co., Ind.:—My visit to your grounds was not only a treat but has proven of good cash value. I have inaugurated many changes in my ground and method of doing things. You will be my "copy book" for the future and I shall imitate you as closely as possible. This is the sixth year I have used your plants and thanks to your many kind letters of advice I am practically out of debt and the inspiration given me by looking over your grounds makes things look bright for the future in growing berries.

Geo. C. Eustiss, Sangamon Co., Ill.:—I carry with me many pleasant and profitable recollections of my visit to your grounds. When I got home I felt like a new man. I saw so many things differently. Think of so many acres of big plants without a rusty leaf or an insect enemy. I am sure no one ever saw the like. This is the fifth year you have supplied me with plants and next year will not be the last. Thanks to your kindness I have built up a large trade and made a pleasant home. The horticulturists ought to build you a high monument for the great good you have done us all.

G. A. Taylor, Barron Co., Wisconsin:—From the six hundred plants I received from you a year ago I picked this year $130 worth of berries which I call a pretty good investment. My only trouble was I could not supply the demand.

W. E. Munson, Allegheny Co., Pa.:—I want to thank you for the good work you have done for fruit growers in publishing your book. It contains more good thoughts than anything ever published and has wiped the mortgage off my farm in short order. I have been growing berries for many years but did not make much until I got this book. I then sent to you for the plants and have propagated from them and I want to tell you they doubled right up in quarts and quality and gave me big prices and more customers than I could supply.

Henry Hess, Moody Co., S. D.:—I wish to report success with the plants you sent me. They were set side by side with those from my own beds of the same varieties in rich ground and given the very highest cultivation. The selected and restricted plants you sent me did not throw out half as many runners but built up large crowns and have produced a crop of berries entirely out of sight of the plants from my own ground. I shall order all the plants I set next spring and propagate from them.

J. P. Enders, Hamilton Co., Ohio:—Two years ago I bought 500 plants for the express purpose of testing your theories of selection and restriction and I have now to report a very marked difference. They were given the same treatment as plants taken from my own beds and I know produced a big third more of much finer fruit. It has convinced me beyond a doubt you are right and I shall in future propagate all my plants in that way. You are entitled to the thanks of all the fruit growers of the country.

C. T. Lathrop, Crawford Co., Wis.:—I have followed your instructions very carefully and watched for questions and answers in the papers. The 1000 plants you sent me were kept in a very narrow matted row and this year produced a trifle over 1700 quarts of the finest berries I ever saw. We had no trouble in selling them at the highest price.

F. L. Thompson, Fremont Co., Iowa:—Our plants produced a very large crop of fine berries and they sold at good prices and we could not supply the demand. We have besides this had the pleasure of bringing in the finest berries sold in this market.

O. O. Pinny, Portage Co., Wis.:—If I had set all of your plants I should have doubled my crop at least. I picked twice as many berries from them as of others of same variety. I have been deceived by nurserymen's claims but this is entirely satisfactory and I shall send you a large order next spring.

A. B. Fredendall, Albany Co., New York:—I have now fruited your plants for four years and they have passed my expectations every year. I shall never set any plants of which I do not know their pedigree and that they have been selected and restricted. I have built up a large trade and have you to thank for my success. I know you are right and my own experiments show your selected plants are away ahead of common stock.

J. P. Blunk, Webster Co., Iowa:—I have followed your directions with plants sent me and they are the talk of the neighborhood. The plants are immense and I shall never set a plant not grown right. You are right in your theories and I watch closely for your articles in the paper.

J. B. Graham, Warren Co., Ky.:—Many of the plants I bought of you are now twenty inches in diameter and loaded with great berries. They were set 30x30 inches and kept in hills. We are greatly pleased with them and you will get large orders from here.

C. H. Wheeler, Sedwick Co., Kan.:—Our plants were grown in hedge row and were far beyond our expectation. The plants ran over a quart to the plant although rains were very excessive in the spring.

E. F. Peck, Mower Co., Minn.:—The plants purchased of you have shown the highest fruiting quality. I have counted over 300 berries on a single plant. They were grown in hills and are doing beyond my wildest expectations.

Silas Boswell, Portage Co., Wis.:—I send you a photograph of the plants I purchased of you a year ago. They were grown strictly in hills in a very rich sand loam. In the fall the plants would average over seven feet in circumference and while we kept no exact account of the berries picked yet we feel satisfied many picked a good deal over four quarts to the plant. They literally lay in piles and we kept on picking and the berries kept on ripening, and it seemed there would be no end to them. The berries were all large and even in size and sold at two to four cents above the market. Since no one else had such berries I am forced to the conclusion that plants had much to do with producing such a crop.

B. R. Engleman, Sullivan Co., Ind.:—I sent to you for plants to test your theory. They were set in alternate rows and given exactly the same cultivation. From the time of setting until berries were picked their behavior was very different and proved every claim you have made in regard to general fruiting vigor. There is not a shadow of doubt about the advantage of using selected and restricted plants.

R. R. Dutton, Labette Co., Kan.:—We followed your directions with the plants sent us and now we are reaping our reward. It is the nicest crop of finest berries I ever saw My grounds show the widest difference in plants and fruit.

J. B. Bruster, Sangamon Co., Ill.:—I made a fair test with your so called Pedigree Plants with stock on my own ground and the results were surprising. The selected plants from you did not make half the runners but stooled up wonderfully and produced fully double the berries, of much larger size and higher quality. They are surely out of sight of any ordinary plants.

F. B. Peck, Summitt Co., Ohio:—I can see a very marked difference in plants I bought of you and those from the matted row on my own ground. The disposition to make runners is not so great while the fruit buds were larger and berries much better.

J. H. Fisher, Delaware Co., N. Y.:—The wide difference between common and thoroughbred plants is well shown in this community. I had a magnificent crop of splendid berries while my neighbors using common alley plants had an ordinary crop. My blackberries are the talk of the neighborhood. Many canes over eight feet high and very few suckers but an immense crop of fine berries.

RETURN, IF NOT DELIVERED IN 5 DAYS, TO

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GEO. S. JOSSELYN,

FREDONIA,

NEW YORK.

NOTICE TO PATRONS.

The plants herein offered are propagated from PURE PEDIGREE STOCK and ideal plants, as explained in the chapters on "Improvement of Plants." I am confident they are the only plants obtainable propagated in this manner, and that their fruiting vigor cannot be equaled While I practice the highest cultivation I know how to give, I have demonstrated that the vigor of my plants has been the basis of my success. By all means start a propagating bed this season.

Orders Must Amount to One Dollar.

The correspondence, postage, booking and filling orders for less than that amount is done at a loss.

Taking up Strawberry Plants.

The whole row of plants is taken up, and all those poorly rooted are thrown out. The fork used for the purpose is so constructed that plants are not bruised or roots broken off. All dead leaves and stems are picked off and roots straightened by such a system that from the time they leave the ground until they are ready for shipment they are not exposed a half minute altogether.

Substitution.

We desire to furnish each customer exactly what he orders, but sometimes find the variety all sold before his order is reached, all orders being filled in the rotation in which they are received and booked. If no substitution is permitted we are obliged to disappoint the customer by returning the money late in the season There are several varieties in the same season and of equal value, and if we are out of the variety ordered and substitution is permitted, we will add 10 per cent. to the plants substituted. Unless you expressly state "No SUBSTITUTION," we will understand you desire your order filled as above stated. There is very little danger of not getting the varieties desired, if orders are sent in early.

Price of Plants.

The prices quoted are net, and the lowest at which they can be grown and placed on the market. This list abrogates all former price lists. No charge will be made for packing, crates or boxes, and delivery to forwarders. No plants sold for fall planting. Not less than one dozen strawberry plants will be sold; it requires that number for a fair trial.

No Discounts and no Agents.

In view of the fact that so many tree dealers and agents have used my catalogue, and represented themselves as my agents, and then delivered cheap plants from other nurserymen, thus greatly injuring my reputation, I am forced to announce that I do not accept orders from agents. No other nurseryman in this country propagates plants by my method, so when an agent represents he is selling pedigree stock, it will be safe to give him the go by.

Terms

strictly cash with order. Orders are not booked unless one-third the amount is remitted and balance before shipment.

Order Early.

All orders are filled in the rotation in which they are received, hence the earlier they are sent in the better.

How to Remit.

Send money by postoffice order, bank draft, express order or registered letter. I cannot be responsible for money sent loose in a letter. When private checks are sent add 15 cents to cover cost of collection.

References.

You can get my commercial credit and standing at any bank, factory or store using R. G. Dunn & Co's or Bradstreet's commercial reports; or write to First National Bank or postmaster, Three Rivers, Mich.

Plants by Mail.

Plants are packed with sphagnum moss, oiled manila paper, with leaves exposed, so they will go safely to any part of the United States for one cent for each two ounces (or eight cents per pound), and to Canada at one cent per ounce. We send plants as far east as Nova Scotia, and west to British Columbia with entire success.

Postage.

Postage on plants is as follows and must be sent in addition to price of plants. Strawberries 5 cents per dozen, 25 cents per hundred. Strawberry plants cannot be sent by mail at thousand rates Raspberries, Blackberries, Grapes, Asparagus, Currants and Gooseberries, 10 cents per dozen, 50 cents per hundred. Two year plants are too large to be sent by mail.

Express Rates.

Express charges are twenty per cent. less than general merchandise to any part of the country. All small orders are generally cheaper by express than freight as only pound rates are charged while railroads charge for 100 pounds without regard to weight when sent by freight.

Freight.

Our railroad connections are first-class. Plants leaving here at six o'clock in the evening arrive in Chicago, Toledo and Detroit the same night and from these points they go in fast through freights to all principal cities and intermediate points. It is seldom they fail to arrive on time but sometimes delays occur and when notified they are behind time we hurry them forward by telegraphic tracers. We advise purchasers to consult local freight agents as to time by freight. If no shipping directions are given we exercise our best judgment without assuming any responsibility.

Guarantee of Genuineness.

The plants being propagated in special beds and labeled when taken up, would seem to preclude the possibility of mistake, and I guarantee plants true to label, with express understanding that if a mistake happens to be made, I am not to be held for any damages beyond the amount received for the plants.

Guaranteeing Results.

We send plants to the most distant states with entire success, to anybody and everybody who order them. I am exceedingly anxious that they shall meet their highest expectations, and to this end will do all in my power to contribute to success. But after they are delivered to express companies or railroads, they belong to the purchasers and I have no control over them. I do not know what treatment they are to receive, hence you can readily see why I cannot, and do not guarantee any results whatever. My responsibility ceases when delivered to express or railroad.

Orders are Acknowledged

as soon as received. If you do not hear from us after a reasonable time, write again.

NOTICE.

This Booklet will be revised every year and sent out free to all who are interested in it. Do not loan it but keep it for reference. If you want one sent to a friend send his address on a postal card and we will mail it with your name and compliments so he will know who sent it. Our object is to place fruit growers in possession of such facts concerning plant life and the laws which govern the development of fruit as will enable them to succeed. My success depends on your success.



The above is a photograph of plants in my experimental grounds, on the morning of the first picking. A part of the foliage was removed to show the fruit. It is my purpose to make this the most complete horticultural establishment in the country where visitors may see the result of continually breeding from ideal plants by selection and restriction, and where berry growers may procure thoroughbred mother plants for their propagating beds or for general planting.

Special attention is called to the engraved autograph letter on inside of front cover.